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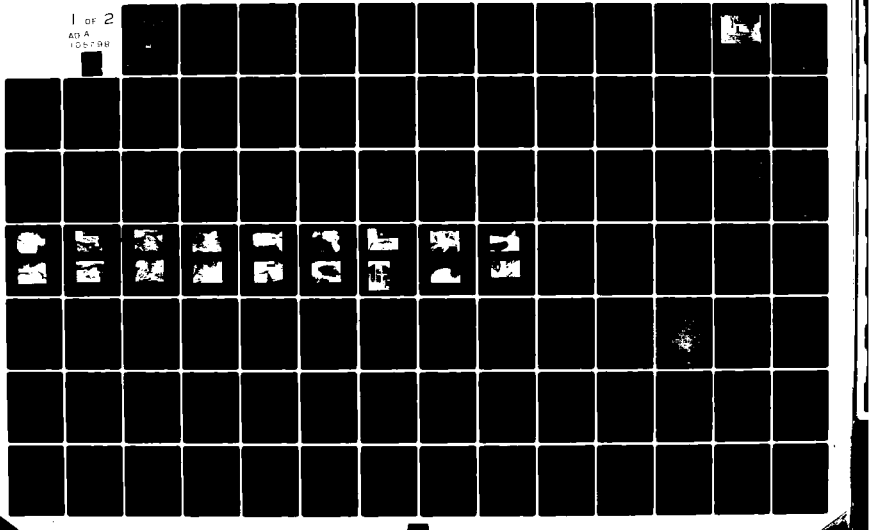

MOHAWK RIVER BASIN

CITY OF GLOVERSVILLE

FULTON COUNTY, NEW YORK

WEST MILLPOND DAM

NY 01060

PHASE I INSPECTION REPORT

NATIONAL DAM INSPECTION PROGRAM

DEPARTMENT OF THE ARMY

NEW YORK DISTRICT, CORPS OF ENGINEERS

26 FEDERAL PLAZA

NEW YORK, NY 10278

JULY 1981

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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Mohawk River Basin

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization.

Examination of available documents and visual inspection of the dam did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some serious deficiencies which require further investigation and remedial work.

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

Hydrologic and hydraulic analysis indicates that maximum spillway discharge capacity is only about 9% of the PMF peak outflow. The 1/2 PMF would overtop the earth embankment and would probably cause failure. Therefore, in accordance with Corps of Engineers' screening criteria for review of spillway adequacy, spillway capacity is considered "seriously inadequate" and the dam is assessed as "unsafe, non-emergency".

The classification of "unsafe" applied to a dam because of a seriously inadequate spillway is not meant to connote the same degree of emergency as would be associated with an "unsafe" classification applied for a structural deficiency. It does mean that there appears to be a serious deficiency in spillway capacity and if a severe storm were to occur, overtopping and failure of the dam could take place, significantly increasing the hazard to loss of life downstream of the dam.

Therefore, it is recommended that within 3 months after receipt of this report by the Owner, a detailed hydrologic and hydraulic analysis be started to better assess spillway capacity. This should include a more accurate determination of the site specific characteristics of the watershed. Within 18 months after receipt of this report by the Owner, any appropriate remedial work should be completed. The detailed analysis and the design and construction observation of any remedial work should be done by a qualified, registered professional engineer.

In the meantime, the Owner should immediately institute a program to visually inspect the dam and its appurtenances at least once a month. Also, within 3 months after receipt of this report the Owner should complete development of a surveillance program for use during periods of heavy runoff and of an emergency action plan outlining action to be taken to minimize the downstream effects of an emergency, together with an effective warning system.

Because of other deficiencies, the following additional investigations should be started within 3 months after receipt of this report by the Owner. The investigations should be performed by a qualified, registered professional engineer.

1) Investigate the causes of subsidence of the crest of the dam at various locations.

2) Investigate the causes of tilting and poor alignment of the concrete-faced stone masonry wall which retains the upstream side of the embankment.

Any remedial work deemed necessary as a result of these investigations should be completed within 18 months after receipt of this report by the Owner. A qualified, registered professional engineer should design and observe the construction of any necessary remedial work.

PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I Investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I Inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the Spillway Test Flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. Because of the magnitude and rarity of such a storm event, a finding that a spillway will not pass the test flood should not be interpreted as necessarily posing a highly inadequate condition. The test flood provides a measure of relative spillway capacity and serves as an aide in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.

The Phase I Investigation does <u>not</u> include an assessment of the need for fences, gates, no-trespassing signs, repairs to existing fences and railings and other items which may be needed to minimize trespass and provide greater security for the facility and safety to the public. An evaluation of the project for compliance with OSHA rules and regulations is also excluded.

WEST MILLPOND DAM, NY 01060

PHASE I INSPECTION REPORT

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NATIONAL DAM INSPECTION PROGRAM

PHASE I INSPECTION REPORT

Identification No.: NY 01060

Name of Dam: West Millpond Dam

State Located: New York

County: Fulton

Municipality: City of Gloversville

Watershed: Mohawk River Basin

Stream: Meco Creek

Date of Inspection: June 3, 1981

ASSESSMENT

Examination of available documents and visual inspection of the dam did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some serious deficiencies which require further investigation and remedial work.

Hydrologic and hydraulic analysis indicates that maximum spillway discharge capacity is only about 9% of the PMF peak outflow. The 1/2 PMF would overtop the earth embankment and would probably cause failure. Therefore, in accordance with Corps of Engineers' screening criteria for review of spillway adequacy, spillway capacity is considered "seriously inadequate" and the dam is assessed as "unsafe, non-emergency".

The classification of "unsafe" applied to a dam because of a seriously inadequate spillway is not meant to connote the same degree of emergency as would be associated with an "unsafe" classification applied for a structural deficiency. It does mean that there appears to be a serious deficiency in spillway capacity and if a severe storm were to occur, overtopping and failure of the dam could take place, significantly increasing the hazard to loss of life downstream of the dam.

Therefore, it is recommended that within 3 months after receipt of this report by the Owner, a detailed hydrologic and hydraulic analysis be started to better assess spillway capacity. This should include a more accurate determination of the site specific characteristics of the watershed. Within 18 months after receipt

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of this report by the Owner, any appropriate remedial work should be completed. The detailed analysis and the design and construction observation of any remedial work should be done by a qualified, registered professional engineer.

In the meantime, the Owner should immediately institute a program to visually inspect the dam and its appurtenances at least once a month. Also, within 3 months after receipt of this report the Owner should complete development of a surveillance program for use during periods of heavy runoff and of an emergency action plan outlining action to be taken to minimize the downstream effects of an emergency, together with an effective warning system.

Because of other deficiencies, the following additional investigations should be started within 3 months after receipt of this report by the Owner. The investigations should be performed by a qualified, registered professional engineer.

1) Investigate the causes of subsidence of the crest of the dam at various locations.

2) Investigate the causes of tilting and poor alignment of the concrete-faced stone masonry wall which retains the upstream side of the embankment.

Any remedial work deemed necessary as a result of these investigations should be completed within 18 months after receipt of this report by the Owner. A qualified, registered professional engineer should design and observe the construction of any necessary remedial work.

The following remedial work should be completed by the Owner within 12 months after his receipt of this report. Where engineering assistance is indicated, the Owner should engage a qualified, registered professional engineer. Assistance by such an engineer may also be useful for some of the other work.

1) Remove trees and brush and their root systems from the embankment and from a zone 25 feet wide next to the downstream toe in accordance with specifications and field observation of the work by an engineer. Backfilling the zones where stumps and roots have been removed should be done with proper material and procedures. Continue to keep these same areas clear by cutting, mowing, and cleanup at least annually.

764 2) Control trespassing on the embankment. A foot path on the downstream slope is bare of vegetation and eroded.

3) Provide erosion protection for the embankment in accordance with recommendations made by an engineer. There is a lack of erosion protection on the crest of the dam near the left abutment.

4) Repair the deteriorated concrete and stone masonry of the dam.

5) Dewater and inspect the outlet pipe gate and make repairs necessary to stop leakage and correct any other problems found.

6) Develop and implement effective routine operation and maintenance procedures for the dam and its appurtenances. The outlet pipe gate and the water supply main valve should be exercised regularly.

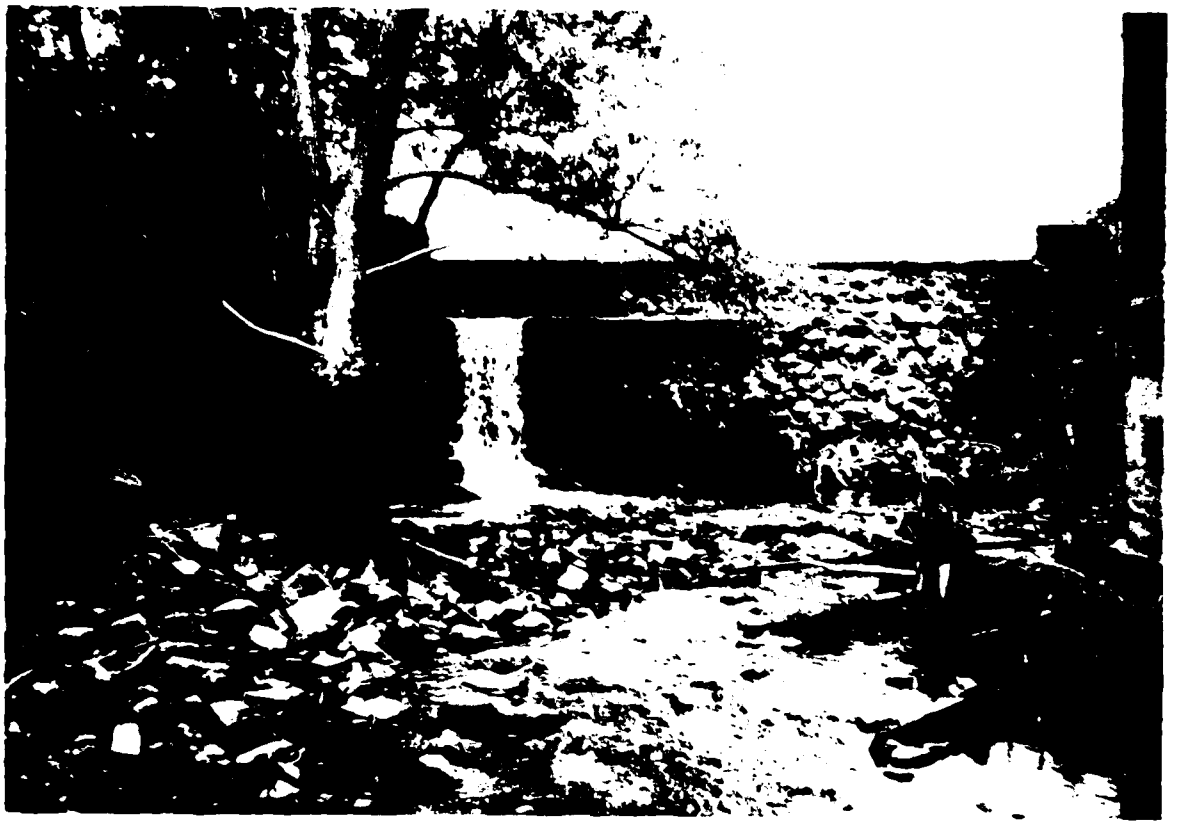
7) Institute a program of comprehensive technical inspection of the dam and its appurtenances by an engineer on a periodic basis of at least once every two years.

Kenneth J. Male
President
C. T. Male Associates, P.C.
NY PE 25004

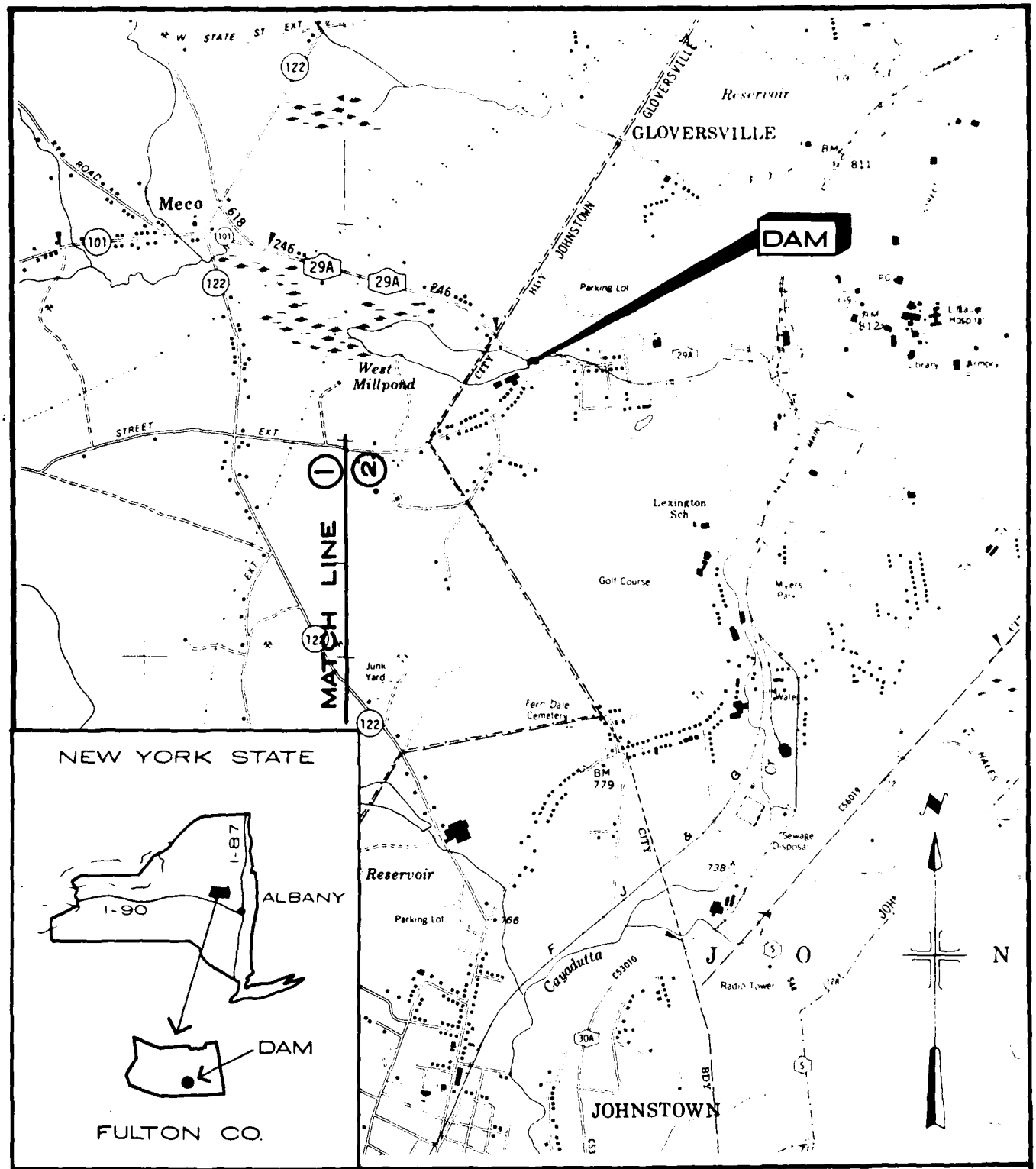
Approved by:

Col. W. M. Smith, Jr.
New York District Engineer
Corps of Engineers

Date: 25 Sept 81



Overview Photo - West Millpond Dam (spillway) - 6 3 81



SCALE OF FEET
0 2000 4000

BASE MAP: NYS-DOT PLANIMETRIC QUADS., 7.5 MIN.
(1)- PECK LAKE, 1969
(2)- GLOVERSVILLE, 1969

PROJECT NO. 58.01.014/80.854

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WEST MILLPOND DAM
VICINITY MAP

CITY OF GLOVERSVILLE	FULTON CO., NY
SCALE: 1" = 2000'	DATE: JANUARY 1981

C.T. MALE ASSOCIATES, P.C.
50 TROY ROAD, SCHENECTADY, N.Y. 12309
PROFESSIONAL ENGINEERS LAND SURVEYORS LAND PLANNING CONSULTANTS

NATIONAL DAM INSPECTION PROGRAM

PHASE I INSPECTION REPORT

NAME OF DAM: WEST MILLPOND DAM, ID NO. NY 01060

SECTION 1

PROJECT INFORMATION

1.1 GENERAL

a. Authority

The National Dam Inspection Act, Public Law 92-367, August 8, 1972, authorized the Secretary of the Army through the Corps of Engineers to initiate a national program of dam inspection throughout the United States. The New York District of the Corps of Engineers has been assigned the responsibility of supervising the inspection of dams within New York State. C. T. Male Associates, P.C., has been retained by the New York District to inspect and report on selected dams in the State of New York. Authorization and notice to proceed was issued to C. T. Male Associates, P.C., under a letter from Michael A. Jezior, LTC, Corps of Engineers. Contract No. DACW51-81-C-0014 has been assigned by the Corps of Engineers for this work.

b. Purpose of Inspection

The purpose of the inspection program is to perform technical inspection and evaluation of non-Federal dams to identify conditions which threaten the public, and thus permit correction in a timely manner by non-Federal interests.

1.2 DESCRIPTION OF PROJECT

a. Location

The dam is located on Meco Creek, a tributary of Cayadutta Creek, in the City of Gloversville. The dam at its maximum section is at Latitude 43 degrees - 3.0 minutes North, Longitude 74 degrees - 21.9 minutes West.

Access to the dam is via State Route 29A west from the City of Gloversville (see Vicinity Map).

The official name of the dam is West Millpond Dam and the official name of the impoundment is West Millpond. In the past the dam has also been known as the West Mill C Dam and the Daniel Hays Dam.

b. Description of Dam and Appurtenances

West Millpond Dam is an earthen embankment about 24 feet high and about 190 feet long, with a crest width that varies between 10 and 20 feet. There is a central chute spillway section, which appears to consist of an earth or rock fill paved over with concrete and confined between upstream and downstream stone masonry retaining walls. (Sketches in old inspection reports indicate that the spillway may have comprised a rock or soil-filled timber crib at one time, and also that the chute may have been plank-lined.) The upstream side of the embankment is retained by a concrete-faced stone masonry retaining wall. Both abutments appear to consist of soil, and the bottom of the channel immediately downstream of the dam is covered with boulders, gravel, and sand.

The concrete-paved chute spillway is 56.5 feet wide at the upstream side of the dam and narrows to about 43 feet at the downstream end of the chute. The chute is inclined about 5H:1V downstream and the spillway crest is about 2.6 feet below the top of dam. At the right downstream end of the spillway there is a concrete-capped stone masonry "step". The downstream end of the spillway is about 16 feet above the channel downstream of the spillway.

The dam has a wood-framed gate house located just upstream of the dam, just to the right of the spillway. Inside the gate house there is water treatment equipment, a wooden lever mechanism for operating the outlet pipe flap gate, and a rising stem floor stand, with handwheel, for the valve on the water supply main.

The outlet pipe for the reservoir is a 27-inch-diameter cast iron pipe with a flap gate at its upstream end. The outlet pipe discharges to the top of the stone masonry "step" at the right downstream end of the spillway.

The water supply main from the reservoir is an 18-inch-diameter cast iron pipe from the reservoir to the Owner's plant about 3,500 feet downstream in Gloversville. This pipe is valved at the plant as well as at its upstream end under the gate house.

473 c. Size Classification

In accordance with Recommended Guidelines (Reference 1), West Millpond Dam is classified as "small" in size because its maximum storage capacity at the top of dam is 256 acre-feet (within the 50 to 1,000-acre-foot range). The height of the dam is about 24 feet.

d. Hazard Classification

In accordance with Recommended Guidelines (Reference 1), West Millpond Dam is classified as having a "high" hazard potential. This is because it is judged that failure of the dam would significantly increase flows downstream which could cause loss of

more than a few human lives and appreciable property damage. Downstream development that could be damaged or destroyed by a dam failure includes: a mill building located immediately downstream of the dam to the left of the spillway (a portion of this building extends over the downstream channel about 50 feet from the dam); several tannery buildings located near the stream about 300 feet downstream; a bridge crossing for State Route 29A about 400 feet from the dam; and several houses located near the stream about 800 feet from the dam. Further downstream from the dam the stream flows through residential and industrial areas of the City of Gloversville. About 3500 feet from the dam the stream flows along side the Owner's plant (vertical drop from the spillway crest to the Owner's plant is about 35 feet).

e. Ownership

The dam is believed to have been constructed around 1870 for the Daniel Hays Company. Presently the dam and pond are owned by:

Rovel Aqua, Inc.
P.O. Box 753
111 Woodside Avenue
Gloversville, New York 12078

Attn: Chris Chiappa, Chief Engineer
(518) 725-8691

f. Operator

Day-to-day operation of the dam is the responsibility of:

Richard McMillan, Sr., Foreman
(same address as above)
(518) 725-8691

g. Purpose of Dam

The dam was originally used by the present Owner to impound process water for dyeing operations. Presently the pond is used as a process water supply for air pollution control and air conditioning equipment at the Owner's textile plant at 111 Woodside Avenue, Gloversville, about 3500 feet downstream of the dam.

341 h. Design and Construction History

It is believed that the dam was built around 1870 for the Daniel Hays Company. The designer and construction contractor for the dam are not known. No records concerning the design or construction of the dam could be found.

In 1912/1913 portions of the upstream side of the dam were faced with concrete and the top of the dam was lowered about

a foot. In 1918/1919 the spillway of the dam was widened. In the 1940's the spillway section was paved with concrete and the 18-inch supply main was installed. In 1973 the outlet pipe was made operational and concrete surfaces at the dam were repaired.

There is no knowledge or record of other construction, modification, or major repair of the dam. Refer to Section 2 of this report, as well as to the Engineering Data Checklist in Appendix F2, for a complete discussion of the design and construction history. Selected drawings and other engineering data are included in Appendices F3 and G.

i. Normal Operating Procedures

The dam site is visited several times a week by the Operator. Normally the gate on the 27-inch outlet pipe is closed and the water level is maintained at about the spillway crest. The gate on the outlet pipe presently leaks at an estimated rate of about 500 gpm. The valve in the gate house on the 18-inch supply main is normally fully open. An 8-inch valve at the downstream end of the main at the Owner's plant is normally only a quarter open and bypasses flow back to the creek.

1.3 PERTINENT DATA

a. Drainage Area (square miles) — 4.90

b. Discharge at Dam Site (cfs)

Spillway (W.S. at top of dam)	730
Outlet Pipe (gate normally closed, estimated potential w/W.S. at spillway crest)	54
Water Supply Main (normally partially open)	Unknown
Maximum Known Flood (estimated at 2.5 feet over spillway crest in April 1975)	690 ±

c. Elevation (feet - NGVD)

All elevations are based on a water surface elevation for the pond from the "Characteristics of New York Lakes (Gazetteer)" (Reference 25) of EL 835, assumed to be the spillway crest, and are in feet above mean sea level NGVD (National Geodetic Vertical Datum of 1929).

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Top of Dam (low point)	837.6 ±
Design High Water	Unknown
Spillway Crest (normal pool)	835
Entrance Inverts of Outlets	
Outlet Pipe	826 ±
Water Supply Main	No Data

d. Reservoir Length (feet) - at spillway crest — 2,400 ±

e. Reservoir Surface Area (acres)

Top of Dam	55 +
Spillway Crest	26.3

f. Reservoir Storage (acre-feet)

Top of Dam	256
Spillway Crest	123

g. Dam

Type - Earthen embankment.
Length - About 190 feet (including spillway).
Height - About 24 feet.
Top Width - Varies from 10 to 20 feet.
Side Slopes - Vertical, retained by stone masonry retaining walls.
Zoning - Unknown.
Impervious Core - Unknown.
Cutoff - Unknown.
Grout Curtain - Unknown.

h. Spillway

Type - Concrete-paved chute spillway.
Length of Weir - 56.5 feet.
Upstream Channel - Concrete-paved section slopes up from reservoir bottom to weir crest.
Downstream Channel - Chute narrows to 43 feet downstream of weir crest, slopes about 5H:1V downstream, and drops off at end about 16 feet into narrow stream channel.

i. Outlet Works

1) Outlet Pipe

Size - 27-inch diameter.
Description - Cast iron pipe from under front of gate house discharges at stone masonry "step" at end of spillway section.
Control - Flap gate on upstream end operated by wooden lever in gate house.

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2) Water Supply Main

Size - 18-inch diameter (at dam).
Description - Cast iron pipe from under front of gate house to plant in Gloversville, about 3500 feet long.
Control - 18-inch valve on upstream end with rising stem floor stand with handwheel in gate house. Also 8-inch valve in line at plant.

SECTION 2

ENGINEERING DATA

2.1 DESIGN DATA

a. Geology

There was no geologic information available in the design data for this dam. The following information was obtained from current geologic maps and publications for this region (References 26, 27, and 28), as well as from the site visit.

West Millpond Dam is located within the Mohawk-Hudson Lowlands of the Appalachian Plateaus Province. Bedrock in the vicinity of the dam consists of shale which is of Middle Ordovician age. With respect to regional geologic structure, the dam is located at the northern fringe of the basin rocks underlying the Catskill Mountains and Plateaus region, where erosion of weaker rock types has exposed beds of generally flat-lying sedimentary sequences. With respect to the soils that overlie bedrock, the dam is located between two east-west trending hills which are part of a belt of such hills that are interpreted to comprise a glacial end moraine and are believed to consist primarily of glacial till.

b. Subsurface Investigations

No records of subsurface investigations are available for this dam.

c. Dam and Appurtenances

It is believed that the dam was built around 1870 for the Daniels Hays Company. The designer of the dam is not known and no records concerning its design could be found.

2.2 CONSTRUCTION HISTORY

a. Initial Construction

The original construction contractor for the dam is not known. No records concerning the original construction of the dam and appurtenances are known to exist.

A brief review of the known construction history, as can be determined from the available data and the Owner, can be found starting on Appendix F2-2.

b. Modifications, Repairs, and Maintenance

In 1912/1913 portions of the upstream side of the dam were faced with concrete and the top of dam was lowered about a foot (see Appendix F3-1). In 1918/1919 the spillway of the dam was widened. In the 1940's the spillway section was paved with concrete and the 18-inch cast iron supply main was installed inside of an old 5-foot sluice from the dam.

In 1973 the gate on the 27-inch outlet pipe was made operational. Concrete patching of the spillway training walls and the retaining wall to the left of the spillway was also performed at this time. Thomas Randall, a local mason contractor no longer in business, performed the concrete repair work.

c. Pending Remedial Work

There are no known plans for any remedial work at the dam.

2.3 OPERATION RECORD

a. Inspections

In 1979 the Owner had the dam inspected by Charles R. Ackerbauer, P.E. In a letter dated July 17, 1979 (see Appendix F3-23) concerning the inspection, the engineer found the dam "to be sound and in no danger of collapse." The letter also suggested to the Owner that "as part of a routine maintenance program the concrete and masonry should be inspected yearly by your staff and any repairs necessary should be promptly attended to."

Between 1913 and 1919 the dam was inspected four times by the New York State Conservation Commission (see Appendices F3-2 to F3-17). The reports for these inspections all note that the dam was in good condition. The last report also indicated that erosion of the dam was occurring to the right of the spillway. Appendix F3-18 contains a photo of the spillway of the dam, taken on May 19, 1919, the date of the last Conservation Commission Inspection.

In an inspection report by the NYS-DEC dated September 18, 1970 (see Appendix F3-20), the outlet works and mechanical equipment at the dam were noted as needing maintenance. The upstream concrete walls were also noted as being cracked. The report also indicated that the dam received no routine maintenance.

On July 12, 1979 the dam was reinspected by the NYS-DEC and the condition of the dam was the same as it was for the September 18, 1970 inspection. A letter to the Owner concerning the 1979 inspection, dated July 18, 1979 (see Appendix F3-24), noted the following defects: tree and brush growth on the dam, displaced stone masonry, and deteriorated concrete. The letter also recommended that the defects be repaired and the dam be maintained on a regular basis.

An inspection report by the NYS-DEC, dated May 6, 1980 (see Appendix F3-25), indicated that there was tree growth on the embankment and seepage through stone portions of the dam. The report stated that "No defects (were) observed beyond normal maintenance."

b. Performance Observations

Other than the observations made in the various inspection reports and correspondence concerning the dam (see Appendix F3) there are no other known records of performance observations.

c. Water Levels and Discharges

There are no known records of water levels or discharges at the dam.

d. Past Floods and Previous Failures

According to the Operator, the highest known flood level at the dam occurred due to a storm in April 1975. The water level in the reservoir rose to within 1.5 inches of the low point of the top of dam (top of concrete wall just to right of gate house). Based on field measurements this flood level corresponds to about 2.5 feet above the spillway crest.

2.4 EVALUATION

a. Availability

As listed on Appendix F1, various engineering data and records are available in the files of the Owner, the Dam Safety Section of the NYS-DEC, and the Division of Fish and Wildlife of the NYS-DEC. This data was reviewed, and copies of the records significant to the dam are included in chronological order in Appendices F3 and G. Appendix F2, Checklist for General Engineering Data and Interview with Dam Owner, also contains pertinent engineering information.

737 b. Adequacy

Available data consisted of inspection reports, correspondence, general data from the Owner, an old photograph, a map of the reservoir, and a sketch with pond depths. Such data as design/construction drawings, record drawings, specifications, design calculations, data on foundation and embankment soils, and operation and performance data were not available. The lack of such in-depth engineering data does not permit a comprehensive review. Therefore, the available data was not adequate by itself to permit an assessment of the dam.

c. Validity

The limited data available appears to be valid.

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SECTION 3

VISUAL INSPECTION

3.1 FINDINGS

a. General

West Millpond Dam was inspected on June 3, 1981. The inspection party (see Appendix B-1) was accompanied by two representatives of the Owner: Chris Chiappa, Chief Engineer, and Richard McMillan, Sr., Operator. The weather was cloudy and mild, with rain occurring late in the afternoon. The water surface was about one inch below the spillway crest, or at about EL 834.9, at the time of the inspection. The Visual Inspection Checklist is included as Appendix B, while selected photos taken during the inspection are included as Appendix A and as the Overview Photo at the beginning of this report. Appendix A-1 is a photo index map.

b. Dam

There is no evidence of any major sloughs or slides on the embankment.

Crest - The crest of the dam is covered with grass over much of its length (see Photo A-2A), but there is a section near the left abutment which is covered with sand and is practically bare of vegetation (see Photo A-2B). There is an irregular depression on the crest, about one foot deep and 5 feet in diameter, 30 feet left of the spillway. There are also depressions along the upstream side of the crest next to both the right (see Photo A-3A) and left (see Photo A-3B) sides of the spillway. The apparent remains of a foundation wall for an ice house are visible on the crest of the embankment to the right of the spillway (see Photo A-4A).

Upstream Slope - The upstream side of the embankment is retained by a vertical, concrete-faced stone masonry wall. This wall is tilted and out of alignment at several locations (see Photo A-2A). The concrete portion of the wall is badly eroded and spalled along its upstream face (see Photos A-6B and A-7B). This deterioration is worst at about the normal waterline (spillway crest) and along the top of the wall. In places the concrete is also cracked or missing. The stone masonry portion of the wall is also deteriorated in some spots.

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Downstream Slope - The downstream slope of the embankment to the right of the spillway is covered with grass on its upper portion (see Photo A-6B) and with trees and brush on its downstream portion. There is one slightly wet and soft area near the downstream toe of the embankment on the right side of the downstream channel

about 8 feet above tailwater level. To the left of the spillway, there appear to be remnants of a vertical dry stone masonry wall which retains the downstream side of the embankment immediately adjacent to the spillway (see Photo A-5A). Farther left the downstream slope of the embankment is covered with trees and brush (see Photo A-7A), stumps (see Photo A-5B), and is locally bare of vegetation due to trespassing (see Photo A-4B).

Zone Next to Downstream Toe - Several large trees are growing in the zone next to the downstream toe of the embankment to the right of the spillway. There is a mill building at the downstream toe of the embankment to the left of the spillway. The stone masonry at the toe of the dam, below the end of spillway, is in good condition (see Photo A-8A and Overview Photo).

Abutments - Both abutments appear to be soil. No bedrock outcrops were observed in the vicinity of the dam.

c. Appurtenant Structures

1) Gate House and Outlet Works

The dam has a wood-framed gate house, set on a concrete foundation, located in the reservoir just to the right of the spillway (see Photos A-6A and A-6B). The aluminum roofing of the gate house is partially missing. Its concrete foundation has minor efflorescence and there is some minor erosion of the concrete at the waterline. The gate house contains water treatment equipment for treating water released to the Owner's plant and it is normally kept locked. Also inside the gate house there is a control mechanism for the flap gate on the upstream end of the 27-inch-diameter outlet pipe and a rising stem floor stand with handwheel for the valve on the 18-inch-diameter water supply main (see Photo A-8B).

The 27-inch-diameter cast iron outlet pipe discharges over a concrete-capped stone masonry "step" at the bottom right side of the spillway (see Photos A-8A and A-9A). Some joints of the outlet pipe are offset by as much as one inch (see Photo A-9B). No seepage was observed and the pipe appeared to be in good condition. The concrete cap over the stone masonry at the downstream end of the pipe was, however, eroded due to the flow of water from the outlet.

344 The flap gate control mechanism for the outlet pipe is a wooden lever with a steel rod on its end that is attached to the gate. The gate leaks somewhat when closed as it was during the inspection and its physical condition was not observable. Leakage was estimated at about 500 gpm.

The 18-inch-diameter cast iron water supply main supplies process water to the Owner's plant. The condition of this pipe was not observable. The floor stand control for the valve on the supply main is rusted, but operable and well lubricated.

2) Spillway and Discharge Channel

The dam has a concrete-paved chute spillway located near the center of the dam (see Photos A-6A, A-6B, and A-8A). The spillway bottom is generally in good condition with only minor surface wear of the concrete.

The left spillway training wall shows evidence of cold pour joints and there is some hairline cracking and surface wear of the concrete. There is erosion of the wall at its upstream end near the waterline (see Photo A-7B). There are also 4 small cracks in the wall for its full height.

The right spillway training wall has some hairline cracking and efflorescence. The concrete of the wall is spalled at the waterline and some repairs to the spalled areas of the wall have been made. There are 5 small cracks in this wall for its full height.

Immediately downstream of the right end of the chute spillway there is a concrete-capped stone masonry "step" (see Photo A-8A). Flow from the outlet pipe discharges onto this "step" and flow from the spillway discharges over this area. There are stones and boulders at the toe of the dam, below the spillway (see Overview Photo).

d. Reservoir Area

The lake appears to be filling in with sediment and organic matter. The Owner indicated that the pond is much shallower now than it used to be due to sedimentation. The slopes along the reservoir perimeter are low and flat, and no evidence of slope instability was observed.

e. Downstream Channel

The bottom of the downstream channel is covered with boulders, gravel, and sand. There are also some logs in the channel between the dam and the mill building which spans the channel immediately downstream of the dam (see Photo A-10B).

3.2 EVALUATION

Lack of vegetation on the crest of the dam near the left abutment renders that section susceptible to erosion if the dam should be overtopped.

Subsidence of the crest of the dam next to both the right and left sides of the spillway and at one location 30 feet left of the spillway is indicative of some unknown problem which might adversely affect the stability of the embankment.

The concrete-faced stone masonry wall which retains the upstream side of the embankment is tilted and out of alignment at several locations. The concrete facing and stone masonry of this wall is also severely deteriorated.

Trees and brush growing on the downstream slope of the embankment and in the zone next to the downstream toe may lead to seepage and piping (internal erosion) problems if a tree blows over and pulls out its roots or if a tree dies and its roots rot. The roots of stumps on the downstream slope may also cause seepage or piping problems when they rot.

Trespassing and a consequent lack of vegetation in paths on the downstream slope of the embankment left of the spillway may result in further erosion and possible breaching of the dam if not controlled.

SECTION 4

OPERATION AND MAINTENANCE PROCEDURES

4.1 OPERATION PROCEDURES

There are no written operation procedures for the dam.

West Millpond is used as a process water supply for air pollution control and air conditioning equipment at the Owner's facilities located at 111 Woodside Avenue, Gloversville. Normally the gate on the 27-inch outlet pipe is closed and the water level is maintained at about the spillway crest. The gate on the outlet pipe presently leaks at an estimated rate of about 500 gpm. The valve in the gate house for the 18-inch supply main to the Owner's plant is normally fully open. An 8-inch valve on the main at the plant, however, is usually only a quarter open, and bypasses flow back to the creek. The process water for the plant is drawn off, upstream of this valve, by a 2-inch supply line.

At the time of the inspection the reservoir level was about one inch lower than the spillway crest, with outflow through the outlet pipe estimated to be about 1 cfs.

4.2 MAINTENANCE OF DAM AND OPERATING FACILITIES

There are no written maintenance procedures for the dam.

The dam site is visited several times a week by the Operator. Brush has been cut yearly from the slopes since about 1972. The outlet pipe gate and the water supply main valve at the dam are exercised once a year. They were last operated this past spring. The reservoir was last drained in the spring of 1980 for algae control and then refilled.

4.3 EMERGENCY ACTION PLAN AND WARNING SYSTEM

There is no emergency action plan and warning system for the dam.

4.4 EVALUATION

Maintenance of the dam is unsatisfactory, even though there have been repairs and some regular maintenance to the dam over the past several years. Some maintenance items, such as brush and tree growth on the downstream slopes, have been neglected. The upstream retaining wall of the dam has also been allowed to deteriorate. However, the Owner has exercised and maintained the operating facilities at the dam. Nevertheless, more effective operation and maintenance procedures need to be developed and implemented by the Owner in order to avoid deterioration of the dam.

The Owner should develop an emergency action plan outlining action to be taken to minimize the downstream effects of an emergency, together with an effective warning system.

SECTION 5

HYDROLOGY AND HYDRAULICS

5.1 DRAINAGE AREA CHARACTERISTICS

West Millpond Dam and West Millpond are located on Meco Creek in central New York. About one mile downstream of the dam the creek joins Cayadutta Creek. Cayadutta Creek drains to the south and discharges into the Mohawk River.

The total drainage area at the dam is 4.90 square miles, of which about 0.041 square miles (26.3 acres), or less than one percent, is actual reservoir surface at the spillway crest. The topography of the drainage area is characterized by slopes of from 5% to 15%. Elevations in the drainage area vary from EL 835 to EL 1520. (See Appendices C-5 and C-6).

5.2 ANALYSIS CRITERIA

The U.S. Army Corps of Engineers Hydrologic Engineering Center's Program HEC-1 DB (Reference 3) was used to develop the test flood hydrology and perform the reservoir routing.

The purpose of this analysis was to evaluate the dam and spillway with respect to their surcharge storage and spillway capacity. Accordingly, it was assumed that the water surface was at the spillway crest at the start of the flood routing. In addition, the outlet pipe was assumed closed, as it is normally. The water supply main, normally open, was neglected for the purposes of this analysis because its capacity is very small compared to the spillway.

A constant base flow of 2 cfs per square mile was chosen to represent average conditions in the drainage area and was inputted into the program for all subareas.

The index PMP (probable maximum precipitation) inputted to the HEC-1 DB program was 19 inches for a 24-hour duration all-season storm over a 200-square-mile basin, according to HMR 33 (Reference 4). Maximum 6-hour, 12-hour, 24-hour, and 48-hour precipitation for the actual size of the drainage area (same for 10 square miles or less) were inputted to the program as percentages of the index PMF in accordance with HMR 33. A storm reduction coefficient was then applied internally by the program in order to transpose or center the storm over the actual total drainage area. Thus, the corrected 48-hour PMP for the actual total drainage area became 21.6 inches. All rainfall was distributed using the Standard Project Storm arrangement embedded in the program.

Appendix C-7 summarizes the subarea, loss rate, and unit hydrograph data inputted to the program. Only two subareas were used. Subarea 1 consists of all the drainage area around the reservoir, and Subarea 2 consists of just the reservoir surface. For the land in Subarea 1, loss rates were assumed to be 1.0 inch initially and a constant 0.1 inch per hour thereafter. A Snyder basin coefficient was assumed for average conditions and a Snyder peaking coefficient was chosen from the 1976 Upper Hudson and Mohawk River Basins Hydrologic Flood Routing Models (Reference 20). A conservative standard lag time was computed. The program uses the inputted lag time and Snyder peaking coefficient to solve by iteration for approximate Clark coefficients which are then used to calculate the runoff hydrograph.

For the reservoir surface making up Subarea 2, loss rates were set to zero so that rainfall would equal rainfall excess, or runoff. Assuming no delay in the rainfall/runoff response, a constant unit hydrograph for a rainfall duration equal to the HEC-1 DB calculation interval was developed per Appendix C-7 and inputted to the program.

The floods selected for analysis were the PMF (probable maximum flood) and 1/2 PMF. Floods as ratios of the PMF (e.g., 1/2 PMF) were taken as ratios of runoff, not of precipitation. Peak inflow to West Millpond is about 8,320 cfs or 1,698 csm (cfs per square mile) for the PMF, and about 4,160 cfs (849 csm) for the 1/2 PMF. Peak outflows are reduced by reservoir routing to about 7,860 cfs (1,604 csm) for the PMF, and about 3,950 cfs (806 csm) for the 1/2 PMF.

5.3 RESERVOIR CAPACITY

Storage capacity data for the reservoir was developed using USGS contour mapping (see Appendix C-5) and depth information on the pond (see Appendices G-1 and F3-19). Area measurements inside contour elevations were obtained from the USGS mapping, a reservoir area of zero was assumed for the bottom of the pond (EL 825), and the capacity of the reservoir at various elevations was then computed by hand using the method of conic sections. The reservoir capacity at the spillway crest, EL 835, was obtained from data provided by the Owner (see Appendix F3-26). The computations appear on Appendix C-6.

At the spillway crest, EL 835, the reservoir has a capacity of about 123 acre-feet. At the top of dam, EL 837.6, the reservoir has a capacity of about 256 acre-feet. Surcharge storage between the spillway crest and top of dam amounts to 133 acre-feet, or about 0.5 inches of runoff from the total 4.90-square-mile drainage area. Therefore, the reservoir has little capacity to attenuate peak inflow.

5.4 SPILLWAY CAPACITY

The dam has a 56.5-foot-long chute spillway near the center of the dam. The low point of the top of dam is about 2.6 feet higher than the spillway crest.

The discharge capacity for the spillway was computed assuming critical flow over an ideal broad-crested weir. Reduction in discharge capacity due to abutment contractions was neglected. A hand tabulation of the spillway discharge computations is presented on Appendix C-8. With water 2.6 feet over the spillway crest (i.e., water level at top of dam) the spillway discharges about 730 cfs.

Total discharge from the dam consists of flow from just the spillway with the outlet pipe and water supply main assumed closed as previously discussed in Section 5.2. Flow over the dam for the overtopping condition was also modeled as an ideal broad-crested weir. The discharge computations for the dam and spillway were done directly by the HEC-1 DB program using the inputted weir parameters. A tabulation of the input and hand-computed results appears as Appendix C-8.

5.5 FLOODS OF RECORD

As noted in Section 2.3d, the flood of record, due to a storm event in April 1975, was about 2.5 feet over the spillway crest. Using the spillway capacity data developed in Section 5.4, the corresponding flood discharge is estimated to have been about 690 cfs (141 csm), or only about 9% of the PMF peak outflow predicted.

5.6 OVERTOPPING POTENTIAL

The results of the overtopping analysis using the HEC-1 DB program are summarized in Table 5.1. The overtopping analysis computer input and output for the PMF and 1/2 PMF are included starting on Appendix C-9.

As noted from Table 5.1, the PMF overtops the dam by 4.8 feet maximum and 1/2 PMF overtops the dam by 2.7 feet maximum, with durations of overtopping of 10 hours and 8.7 hours, respectively. Peak inflows are 8,320 cfs for the PMF and 4,160 cfs for the 1/2 PMF. Peak outflows are reduced by reservoir routing to 7,860 cfs for the PMF and to 3,950 cfs for the 1/2 PMF. Time to maximum stage, or the time from the start of the 48-hour storm to peak outflow, is about 44 hours for both flood events. The peak portions of the inflow and outflow hydrographs for the PMF and 1/2 PMF are shown by the computer plots on Appendices on C-15 and C-16. Total project discharge capacity at the top of dam is due to the spillway (outlet works closed) and is about 730 cfs, or only about 9% of the PMF peak outflow and about 18% of the 1/2 PMF peak outflow.

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5.7 EVALUATION

Maximum spillway discharge capacity (outlet works closed) is only about 9% of the PMF peak outflow. The 1/2 PMF would overtop the earth embankment and would probably cause failure. It is judged that failure due to overtopping would significantly increase the hazard to loss of life downstream from that which would exist just

TABLE 5.1

WEST MILLPOND DAM

OVERTOPPING ANALYSIS

CONDITIONS

Total Drainage Area = 4.90 square miles
Start Routing at Spillway Crest EL 835
Top of Dam EL 837.6
Total Project Discharge Capacity at Top of Dam = 730 cfs ± due to spillway only. All outlets assumed closed.
Some values rounded from computed results.

	PMF	1/2 PMF (a)
INFLOW		
48-hour Rainfall (inches)	21.6	12.7 (b)
48-hour Rainfall Excess (inches) (c)	17.9	9.0 (d)
Peak Inflow (cfs)	8,320	4,160
Peak Inflow (csm)	1,698	849
OUTFLOW		
Peak Outflow (cfs)	7,860	3,950
Peak Outflow (csm)	1,604	806
Time to Peak Outflow (hours)	43.5	43.5
Maximum Storage (acre-feet)	700	418
Max. W.S. Elevation (feet-NGVD)	842.4	840.3
Minimum Freeboard (feet)	overtopped	overtopped
Maximum Depth over Dam (feet)	4.8	2.7
Duration of Overtopping (hours)	10.0	8.7

(a) One-half of PMF total runoff, including base flow. For PMF base flow = 2 cfs per square mile = 10 cfs ±.
(b) Approximation assuming total losses are the same as for the PMF.
(c) Rainfall Excess = Rainfall for the Reservoir Surface. For the rest of the drainage area, losses are assumed to be 1.0 inch initially and 0.1 inch per hour thereafter.
(d) Equal to one-half of PMF value.

prior to failure. Therefore, in accordance with Corps of Engineers' screening criteria for review of spillway adequacy, spillway capacity is considered "seriously inadequate" and the dam is assessed as "unsafe, non-emergency".

SECTION 6

STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations

The following visual observations, which are described in detail in Section 3, are indicative of potential long-term stability problems at West Millpond Dam:

1) Lack of vegetation for erosion protection on the crest of the dam near the left abutment.

2) Subsidence of the crest of the dam at three locations.

3) Tilting and irregular alignment of the concrete-faced stone masonry wall which retains the upstream side of the embankment.

4) Trees and brush growing on the downstream slope and in the zone adjacent to the downstream toe.

5) Lack of vegetation locally due to trespassing on the downstream slope.

b. Design and Construction Data

No records of design and construction data for this dam are available.

c. Operating Records

Various inspections reports by the NYS-DEC (see Appendix F3) noted that there were trees and brush growing on the embankment, that the upstream face of the dam was deteriorating, and that these were unacceptable conditions.

d. Post-Construction Changes

A letter dated September 9, 1913 from the Owner to the N.Y. State Conservation Commission (see Appendix F3-1) indicates that "a part of the North wall of the Pond and the front of the Dam was faced with Concrete so as to stop leaking." Crude sketches of the dam, appended to inspection reports dated 1917, 1918, and 1919 (see Appendices F3-3 to F3-16) indicate that changes may have been made to the spillway structure, but the details of the changes cannot be ascertained from the sketches.

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e. Seismic Stability

This dam is in Seismic Zone 2. According to the Recommended Guidelines (Reference 1), a seismic stability analysis is not required.

6.2 STABILITY ANALYSIS

A structural stability analysis is not required because there are no gravity structures at this dam to analyze.

SECTION 7

ASSESSMENT AND RECOMMENDATIONS

7.1 ASSESSMENT

a. Safety

Visual inspection of West Millpond Dam revealed the following deficiencies which affect the safety of the dam:

1) Trees and brush growing on the embankment and in the zone adjacent to the downstream toe.

2) Subsidence of the crest of the dam at three locations.

3) Tilting and irregular alignment of the concrete-faced stone masonry wall which retains the upstream side of the embankment and general deterioration of this wall.

4) Lack of vegetation locally due to trespassing on the downstream slope.

5) Lack of erosion protection on the crest of the dam near the left abutment.

Hydrologic and hydraulic analysis indicates that maximum spillway discharge capacity is only about 9% of the PMF peak outflow. The 1/2 PMF would overtop the earth embankment and would probably cause falure. It is judged that failure due to overtopping would significantly increase the hazard to loss of life downstream from that which would exist just prior to failure. Therefore, in accordance with Corps of Engineers' screening criteria for review of spillway adequacy, spillway capacity is considered "seriously inadequate" and the dam is assessed as "unsafe, non-emergency".

b. Adequacy of Information

Available information, together with that gathered during the visual inspection, is considered adequate for this Phase I Inspection.

c. Need for Additional Investigations

The following detailed engineering investigations should be performed by a registered professional engineer qualified by training and experience in the design of dams:

1) Perform a detailed hydrologic and hydraulic analysis to better assess spillway adequacy. This should include a more accurate determination of the site specific characteristics of the watershed.

2) Investigate the causes of subsidence of the crest of the dam at various locations.

3) Investigate the causes of tilting and poor alignment of the concrete-faced stone masonry wall which retains the upstream side of the embankment.

d. Urgency

As recommended below in Section 7.2a, a program to visually inspect the dam at least once a month should be instituted immediately. As recommended below in Section 7.2b, development of a surveillance program and an emergency action plan should be completed within 3 months after receipt of this Phase I Inspection Report by the Owner. While the action plan is being developed, and within 3 months after receipt of this report by the Owner, the investigations recommended above in Section 7.1c should be started.

Any remedial work deemed necessary as a result of these investigations should be completed within 18 months after receipt of this report by the Owner.

Measures recommended below in Section 7.2c should be completed within 12 months after receipt of this report by the Owner.

7.2 RECOMMENDED MEASURES

The following work should be performed by the Owner. Where engineering assistance is indicated, the Owner should engage a registered professional engineer qualified by training and experience in the design of dams. Assistance by such an engineer may also be useful for some of the other work.

a. Complete Immediately

Institute a program to visually inspect - not just casually look at - the dam and its appurtenances at lease once a month.

b. Complete Within 3 Months

Develop a surveillance program for use during and immediately after heavy rainfall or snowmelt, and also an emergency action plan outlining action to be taken to minimize the downstream effects of an emergency, together with an effective warning system.

c. Complete Within 12 Months

1) Remove trees and brush and their root systems from the embankment and from a zone 25 feet wide next to the downstream toe in accordance with specifications and field observation of the work by an engineer. Backfilling the zones where stumps and roots have been removed should be done with proper material and procedures. Continue to keep these same areas clear by cutting, mowing, and cleanup at least annually.

2) Control trespassing on the embankment. A foot path on the downstream slope is bare of vegetation and eroded.

3) Provide erosion protection for the embankment in accordance with recommendations made by an engineer. There is a lack of erosion protection on the crest of the dam near the left abutment.

4) Repair the deteriorated concrete and stone masonry of the dam.

5) Dewater and inspect the outlet pipe gate and make repairs necessary to stop leakage and correct any other problems found.

6) Develop and implement effective routine operation and maintenance procedures for the dam and its appurtenances. The outlet pipe gate and the water supply main valve should be exercised regularly.

7) Institute a program of comprehensive technical inspection of the dam and its appurtenances by an engineer on a periodic basis of at least once every two years.

d. Complete Within 18 Months

The following remedial work should be completed by the Owner. A qualified, registered professional engineer should design and observe the construction of the remedial work.

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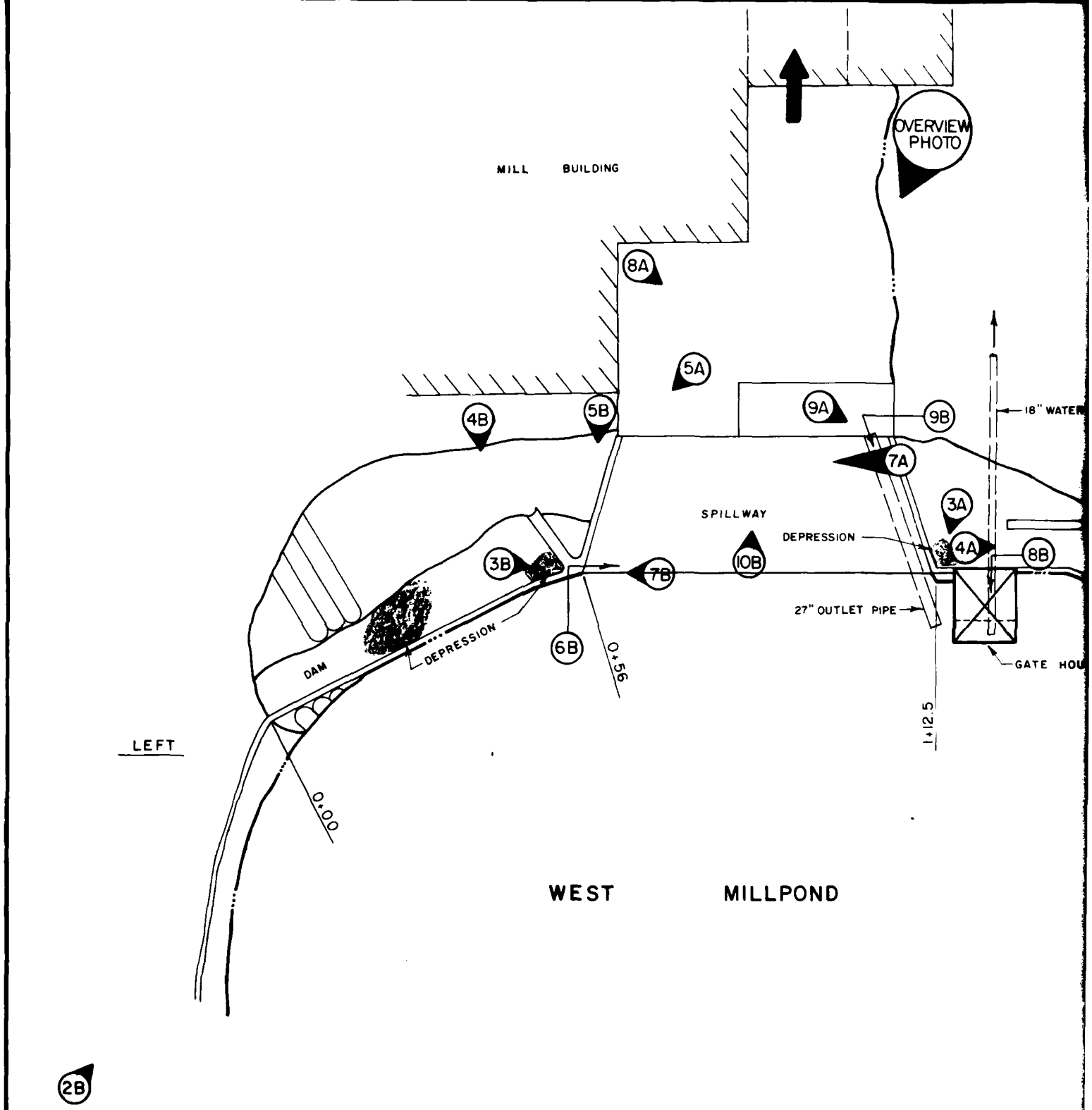
1) Appropriate modifications as a result of the detailed hydrologic and hydraulic analysis.

2) Appropriate modifications as a result of investigating the causes of subsidence of the crest of the dam at various locations.

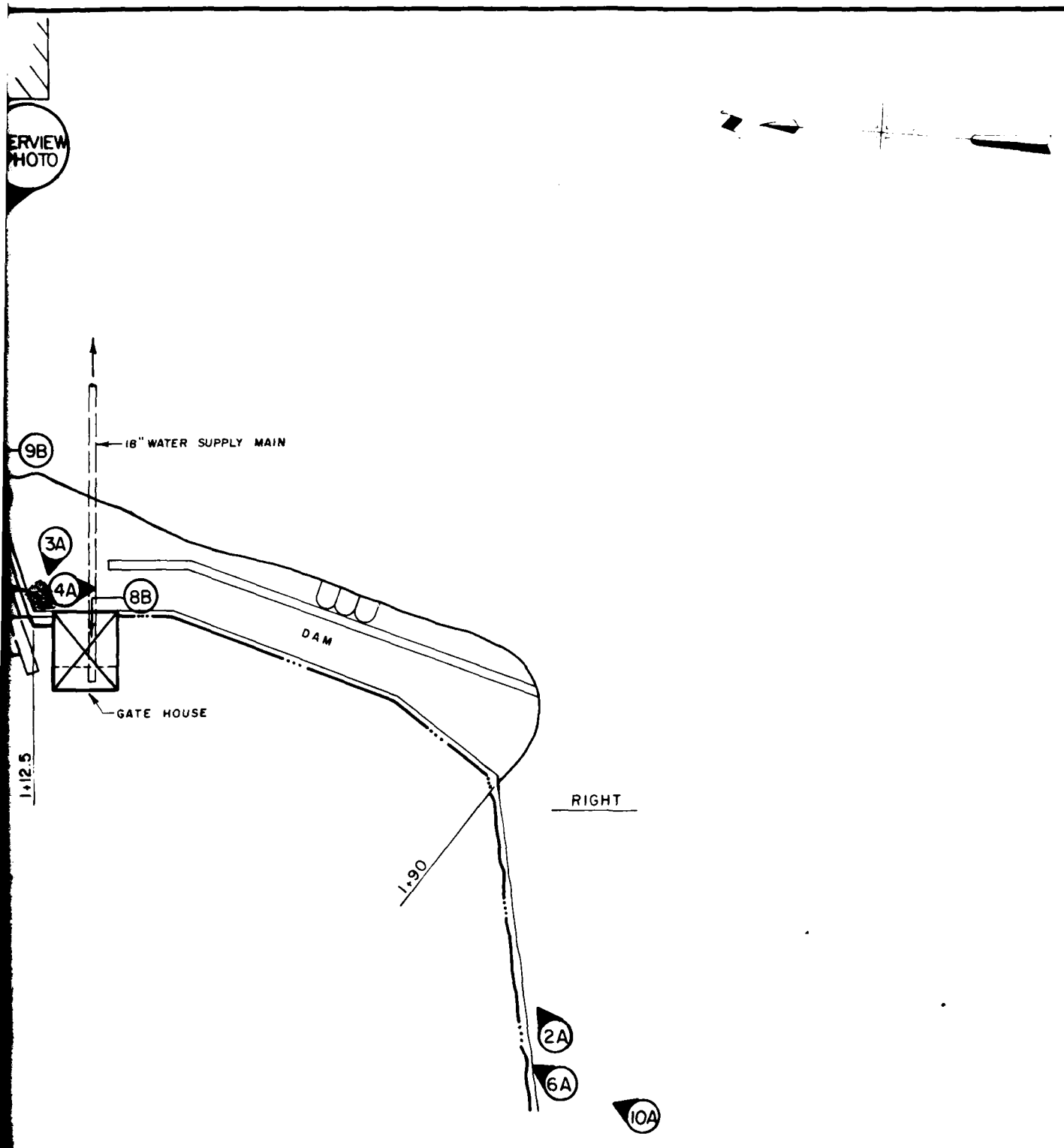
3) Appropriate modifications as a result of investigating the causes of tilting and poor alignment of the concrete-faced stone masonry wall which retains the upstream side of the embankment.

APPENDIX A

PHOTOGRAPHS


OVERVIEW PHOTO
MILL BUILDING
8A
5A
4B
5B
9A
9B
18" WATER
7A
3A
SPILLWAY
DEPRESSION
4A
8B
3B
10B
7B
27" OUTLET PIPE
6B
0+56
DAM
DEPRESSION
GATE HOU
1+12.5
LEFT
0+00
WEST MILLPOND
2B

PROJECT



WEST MILLPOND DAM
PHOTO INDEX MAP

CITY OF GLOVERSVILLE	FULTON CO., N.Y.
SCALE: NONE	DATE JULY 1981

C.T. MALE ASSOCIATES, P.C.
3000 TROY ROAD, SCHENECTADY, N.Y. 12309
PROFESSIONAL ENGINEERS LAND SURVEYORS LAND PLANNING CONSULTANTS

PROJECT NO. 58-01-00014/80.854

A-1

DWG. NO. 81-24

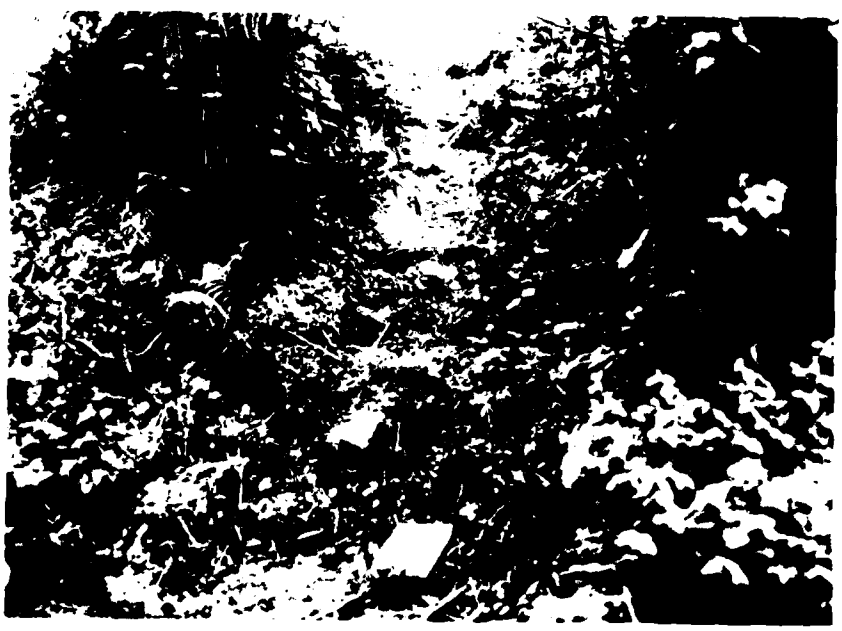
A-2A Upstream face of dam viewed from right bank of reservoir. Concrete-faced wall at upstream side of embankment is considerably cracked, spalled, and displaced - 6/3/81

A-2B Left bank of reservoir looking toward dam. Gate house in right part of photo - 6/3/81

A-3A Apparent erosion or lost ground on downstream side of upstream retaining wall next to right side of spillway - 6/3/81

A-3B Apparent subsidence of about 8 inches next to retaining wall on upstream side of embankment close to left end of spillway. 6/3/81

A-4A Top of dam viewed from right side of gate house. Concrete-faced masonry retaining wall is on upstream side of crest and old foundation wall is dowstream of crest - 6/3/81



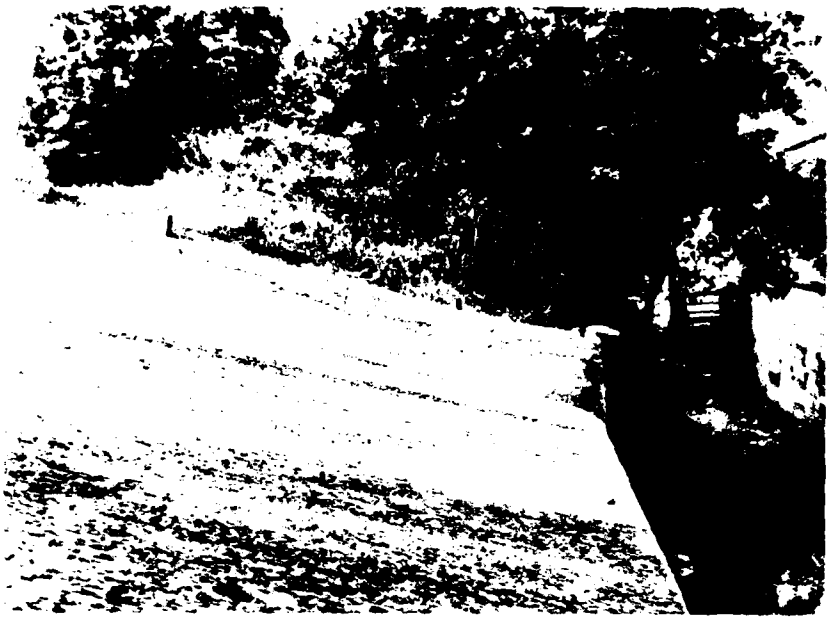
A-4B Footpath eroded into downstream slope about 20 feet to left of spillway - 6/3/81

A-5A Downstream face of spillway and dam at left side of downstream channel - 6/3/81

A-5B Tree stumps and underlying open stone masonry next to left end of spillway - 6/3/81

A-6A Upstream view of dam from right bank of reservoir. Gate house, spillway, and left portion of dam are from right to left in photo. 6/3/81

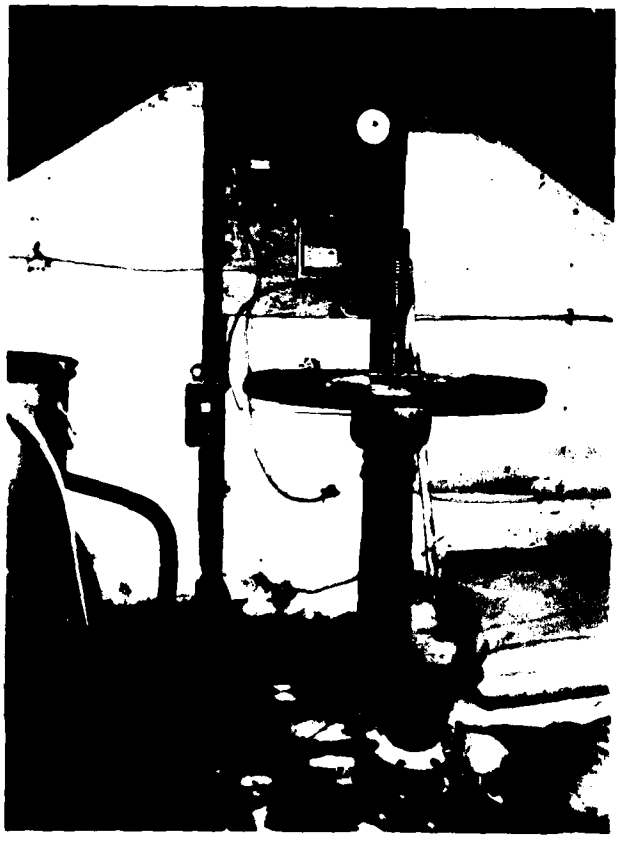
A-6B Spillway crest and gate house viewed from left side of spillway. 6/3/81



A-7A Downstream slope of embankment to left of spillway - 6/3/81

A-7B Left training wall contact with spillway bottom. Note erosion of concrete at base of training wall and deteriorated condition of upstream retaining wall of dam - 6/3/81

A-8A Spillway viewed from downstream. Gate house is at top center and end of outlet pipe is at left of photo - 6/3/81



A-8B Rising-stem floor stand with hand-wheel in gate house for water supply main. Lever control for outlet pipe is to left of floor stand and beyond right side of photo - 6/3/81

A-9A Downstream end of outlet pipe - 6/3/81

A-9B Inside of outlet pipe looking upstream - 6/3/81

A-10A Dam viewed from upstream - 6/3/81

A-10B Downstream channel viewed from center of spillway. Building spans channel immediately downstream of spillway. Note logs and debris in channel - 6/3/81

APPENDIX B

VISUAL INSPECTION CHECKLIST

PHASE I

VISUAL INSPECTION CHECKLIST

1. BASIC DATA

a. General

Name of Dam West Millpond DAM

Fed. I.D.# NY01060 DEC Dam No. 172D - 392

River Basin MOHAWK

Location: ~~Town~~ CITY GLOVERSVILLE County FULTON

Stream Name MECO CREEK

Tributary of CAYADUTTA CREEK

Latitude (N) 43° 3.0' Longitude (W) 74° - 21.9'

Type of Dam EARTH

Hazard Classification HIGH

Date(s) of Inspection June 3, 1981

Weather Conditions OVERCAST + WARM

Reservoir Level at Time of Inspection EL 834.9 ±
1"± BELOW SPILLWAY CREST

b. Inspection Personnel (*Recorder) THOMAS BENNEDUM - CTM,
EDWIN VOPELAK JR* - CTM, RONALD C. HIRSCHFELD* - GEI

c. Persons Contacted (Including Title, Address & Phone No.)

CHRIS CHIAPPA, CHEIF ENGINEER, ROVEL AQUA INC, P.O. BOX 753
111 WOODSIDE DRIVE, GLOVERSVILLE, NY 12078 (518) 725-8691

RICHARD MCMILLAN SR., FOREMAN (SAME ADDRESS + PHONE AS ABOVE)

d. History

Date Constructed 1870± Date(s) Reconstructed 1912-1913, 1918-1919, 1940's

Designer UNKNOWN

Constructed By UNKNOWN FOR DANIEL HAYS CO., LEATHER TANNERY

Owner ROVEL AQUA INC, P.O. BOX 753, 111 WOODSIDE DRIVE
GLOVERSVILLE, N.Y. 12078 ATTN: CHRIS CHIAPPA, CHIEF ENGR (518) 725-8691

2. EMBANKMENT

a. Characteristics

GEI 1) Embankment Material Unknown

GEI 2) Cutoff Type Unknown

GEI 3) Impervious Core Unknown

GEI 4) Internal Drainage System Unknown

GEI 5) Miscellaneous No comments

GEI b. Crest

GEI 1) Vertical Alignment Irregular depression about one foot deep on crest 30 feet left of spillway

GEI 2) Horizontal Alignment Concrete-faced masonry wall which retains upstream side of embankment is tilted and out of alignment in several locations.

GEI 3) Lateral Movement See b.(2), above.

GEI 4) Surface Cracks None observed

GEI 5) Miscellaneous No comments

GEI c. Upstream Slope

GEI 1) Slope (Estimate H:V) Vertical

GEI 2) Undesirable Growth or Debris, Animal Burrows None observed

GEI 3) Sloughing, Subsidence or Depressions Not applicable

GEI 4) Slope Protection Concrete-faced stone-masonry wall

GEI 5) Surface Cracks or Movement at Toe Not visible beneath reservoir surface.

GEI d. Downstream Slope

GEI 1) Slope (Estimate - H:V) Variable; 1.5H:1V to 3H:1V

GEI 2) Undesirable Growth or Debris, Animal Burrows Trees, brush, and stumps on downstream slope

GEI 3) Sloughing, Subsidence or Depressions Footpaths bare of vegetation near left end of spillway

GEI 4) Surface Cracks or Movement at Toe None observed

GEI 5) Seepage Wet spot about 8 feet above tailwater elevation near right end of spillway.

GEI 6) External Drainage System (Ditches, Trenches, Blanket) None observed

GEI 7) Condition Around Outlet Structure Not applicable

GEI 8) Seepage Beyond Toe None observed.

GEI e. Abutments - Embankment Contact

GEI 1) Erosion at Contact None observed

GEI 2) Seepage Along Contact None observed

3. DRAINAGE SYSTEM

GEI a. Description of System None observed

GEI b. Condition of System Not applicable

GEI c. Discharge from Drainage System Not applicable

4. INSTRUMENTATION (Monumentation/Surveys, Observation Wells, GEI Weirs, Piezometers, Etc.)

None observed

5. RESERVOIR

GEI a. Slopes Flat slopes. No apparent stability problems.

GEI b. Sedimentation Lake is filling with sediment and becoming a swamp

GEI c. Unusual Conditions Which Affect Dam None observed

6. AREA DOWNSTREAM OF DAM

a. Downstream Hazard (No. of Homes, Highways, etc.) MILL BUILDING IMMEDIATELY D/S ON LEFT & OVER CHANNEL 50' D/S, TANNERY BLDGS 300'± D/S, NYS RTE #29A CROSSES STREAM 400' D/S, SEVERAL HOUSES ON STREAM BANK 800'± D/S, THEN STREAM FLOWS THROUGH RESIDENTIAL + INDUSTRIAL AREAS OF CITY.

GEI b. Seepage, Growth Trees growing on right bank of downstream channel

GEI c. Evidence of Movement Beyond Toe of Dam None observed.

d. Condition of Downstream Channel Logs in channel. MILL BLDG ON LEFT BANK. 30'± D/S MILL BLDG JUTS INTO CHANNEL, 50' D/S CHANNEL CONSTRICTED BY BLDG OVER CHANNEL, 300' D/S GOES UNDER NYS RTE #29A BRIDGE, CHANNEL VERY NARROW (10' AND LESS) D/S W/ CONCRETE WALLS AT BANKS.

7. SPILLWAY(S) (Including Discharge Channel)

a. General CONCRETE PAVED CHUTE SPILLWAY IN CENTER OF DAM OVER OLD STONE FILLED CRIB SECTION IT IS BELIEVED. 56.5' WIDE AT CREST, 43' WIDE AT BOTTOM OF CHUTE OVER STONE MASONRY WALL @ D/S END. 11° SLOPE FROM CREST TO BOTTOM OF CHUTE, END OF CHUTE DROPS OFF INTO NATURAL CHANNEL. CHUTE HAS 3.5' HIGH CONCRETE TRAINING WALLS.

b. Conditon of Service Spillway — OVERALL GOOD CONDITION

SPILLWAY BOTTOM - GOOD CONDITION, MINOR SURFACE WEAR OF CONCRETE, CONSTRUCTION JOINTS GOOD.

LEFT TRAINING WALL - CONCRETE POUR JOINTS EVIDENT (COLD JOINTS) SOME HAIRLINE CRACKING, SURFACE WEAR, EROSION AT U/S END AT WATERLINE IN STONE MASONRY. 4 MINOR CRACKS, FULL HEIGHT OF WALL, 3 AT LOCATION OF PIPES EMBEDDED IN WALL

RIGHT TRAINING WALL - SOME HAIRLING CRACKING + EFFLORESCENCE. SPALLING OF CONCRETE AT U/S WATERLINE. SOME SURFACE REPAIR OF SPALLED AREAS HAS BEEN DONE. 5 MINOR CRACKS, FULL HEIGHT OF WALL, 2 AT LOCATION OF PIPES EMBEDDED IN WALL

~~c. Condition of Auxiliary Spillway~~

c. N/A

d. Condition of Discharge Channel CHUTE GOOD. BELOW CHUTE SECTION DROPS INTO CHANNEL. STEPPED SECTION OF STONE WALL AT D/S END RIGHT SIDE W/ DEBRIS IN STREAM CHANNEL AT D/S TOE. FURTHER D/S BUILDINGS ENCROACH CHANNEL, SEE 6.d.

8. RESERVOIR DRAIN/OUTLET

a. Type: Pipe ✓ Conduit _____ Other _____

b. Material: Concrete _____ Metal ✓ Other _____

c. Size: 27" Length _____

d. Invert Elevations: Entrance _____ Exit _____

SEE H&H DATA CHECKLIST APPENDIX C

e. Physical Condition (Describe)

Unobservable _____

1) Material CAST IRON PIPE 5' LENGTHS

2) Joints NO SEEPAGE OBSERVED Alignment SOME JOINTS OUT OF ALIGNMENT BY AS MUCH AS 1"

3) Structural Integrity APPEARS GOOD

4) Hydraulic Capability PIPE CAPACITY OKAY W/ NO TAIL WATER PROBLEMS. GATE AT U/S END HOWEVER MAY NOT OPEN FULL

f. Means of Control: Gate ✓ Valve ____ Uncontrolled ____

Operation: Operable ✓ Inoperable ____ Other _____

Present Condition (Describe) FLAP GATE. HAS WOODEN LEVER W/ STEEL ROD ON END THAT IS ATTACHED TO GATE. WHEN LEVER IS DEPRESSED, GATE OPENS. GATE LEAKS SOMEWHAT. CONDITION NOT OBSERVABLE

g. Other Outlets (water mains, diversion pipes) 18" WATER SUPPLY MAIN FOR PROCESS WATER TO OWNER'S PLANT - NORMALLY OPEN FULL. 18" RISING STEM FLOOR STAND W/ HANDWHEEL IN GATE HOUSE, RUSTED BUT OPERABLE + WELL LUBRICATED (18" CIP IS INSIDE OLD 5' DIA SLUICE AT DAM SITE). 8" VALVE AT D/S END AT PLANT ALSO CONTROLS THIS PIPE

0920 Name of Dam West Millpond Dam Date June 3, 1981 7

9. STRUCTURAL D/S STONE MASONRY GOOD CONDITION, FOR SPILLWAY SEE 7.b., U/S WALL OF DAM DISCUSSED BELOW.

a. Concrete Surfaces U/S CONCRETE CAPPED STONE MASONRY WALL W/ CONCRETE FACE - WALL BADLY ERODED & SPALLED IN SPOTS ALL ALONG U/S FACE, WORST AT WATER LINE & ON TOP, SOME PLACE CONCRETE FACE COMPLETELY GONE & STONE MASONRY IS DETERIORATING

b. Structural Cracking CRACKS IN CONC & EXPOSED STONE MASONRY

c. Movement - Horizontal & Vertical Alignment(Settlement) WALL IS IRREGULAR, BULGING & TILTING IN SPOTS, SOME CRACKS OFFSET BY MORE THAN 1"

GEI d. Junctions with Abutments or Embankments Good condition

GEI e. Drains - Foundation, Joint, Face None observed
5 - 15" CONCRETE PLUGS W/ BOLTS IN CENTER AT TOP OF CHUTE SECTION OF SPILLWAY JUST D/S OF CREST - FUNCTION NOT KNOWN.

f. Water Passages, Conduits, Sluices STONE MASONRY AROUND OUTLET PIPE GOOD. CONCRETE CAP OVER STONE MASONRY STEP AT D/S END IS ERODED AT END OF PIPE DUE TO FLOWING WATER

GEI g. Seepage or Leakage None observed

0798 Name of Dam West Millpond Dam Date June 3, 1981 8

h. Joints - Construction, etc. POUR BOND BETWEEN CONCRETE FACE & STONE MASONRY - LARGE SECTIONS OF CONCRETE MISSING

GEI i. Foundation Sand, gravel, and boulders cover bottom of downstream channel next to spillway

GEI j. Abutments Embankment section between spillway and abutments

k. Control Gates NONE OBSERVED.

l. Approach & Outlet Channels RESERVOIR U/S OF SPILLWAY. IT SLOPES UPWARD TO SPILLWAY CREST (CONCRETE PAVING VISIBLE U/S). D/S CHANNEL IS WIDE AS END OF CHUTE D/S. SPILLWAY BIAS OFF AXIS 15° FROM END OF CHUTE INTO CHANNEL. AT RIGHT SIDE BELOW CHUTE HOWEVER, THERE IS STEPPED SECTION 5' BELOW END OF CHUTE TO FLOOR. APPROACH TO OUTLET PIPES IS RESERVOIR A/A TO IN FRONT OF CONC. FOUNDATION OF GATE HOUSE 17" PIPE DISCHARGES ONTO STEPPED SECTION & THEN DROPS OFF INTO D/S CHANNEL

m. Energy Dissipators (Plunge Pool, etc.) SOME PILED ROCK AT D/S TOE OF DAM.

n. Intake Structures NOT OBSERVABLE.

o. Stability

p. Miscellaneous

8876 Name of Dam West Millpond Dam Date June 3, 1981 9

10. APPURTENANT STRUCTURES (Power House, Lock, Gatehouse, Service Bridge, Other)

a. Description: GATE HOUSE - WOOD FRAME STRUCTURE OFFSET U/S OVER CONCRETE FOUNDATION. CONTROL STEMS FOR GATE ON 72" PIPE & VALVE ON 18" PIPE ARE THROUGH GATE HOUSE FLOOR & U/S OF ITS CONCRETE FOUNDATION.

b. Condition: GATE HOUSE - ALUMINUM ROOF PARTIALLY MISSING, BLDG. IS KEPT LOCKED. FOUNDATION CONCRETE HAS MINOR EFFLORESCENCE & SHOWS MINOR EROSION AT WATERLINE.

11. MISCELLANEOUS MECHANICAL/ELECTRICAL EQUIPMENT

a. Description: LIGHT, HEATER, 2 PUMPS & CHEMICAL FEED TANK FOR USE IN CHEMICALLY CONDITIONING WATER TO PLANT W/ POLY PHOSPHATES.

b. Condition: OPERABLE.

12. OTHER

APPENDIX C

HYDROLOGIC AND HYDRAULIC ENGINEERING DATA

CHECKLIST AND COMPUTATIONS

TABLE OF CONTENTS

4595

PHASE I INSPECTION

HYDROLOGIC AND HYDRAULIC
ENGINEERING DATA CHECKLIST

Name of Dam WEST MILLPOND DAM Fed. Id.# NY01060

1. AREA-CAPACITY DATA

	Elevation (ft.)	Surface Area (acres)	Storage Capacity (acre-ft.)
a. Top of Dam (LOW POINT)	837.6	54.7 EST.	256
b. Design High Water (Max. Design Pool)	UNKNOWN		
c. Auxiliary Spillway Crest	N/A		
d. Pool Level with Flashboards	N/A		
e. ~~Service~~ Spillway Crest	835	26.3	123

2. DISCHARGES

	Volume (cfs)
a. Average Daily (OUTLET PIPE LEAKAGE + PROCESS WATER)	~1
b. Spillway @ Top of Dam	730
c. Spillway @ Design High Water	UNKNOWN
d. Service Spillway @ Auxiliary Spillway Crest Elevation	N/A
e. Low Level Outlet (OUTLET PIPE) (NORMALLY CLOSED-W/ W.S. @ SPILLWAY CREST ESTIMATED Q = 54 cfs)	0
f. Total (of all facilities) @ Top of Dam*	730
g. Maximum Known Flood	690±
h. At Time of Inspection (JUNE 3, 1981, W.S. 1"± BELOW SPILLWAY FLOW DUE LEAKAGE OF OUTLET PIPE GATE)	1 EST.

* EXCLUDES WATER SUPPLY MAIN, CAPACITY UNKNOWN & OUTLET PIPE, NORMALLY CLOSED.

4596

3. TOP OF DAM

Elevation 837.6 (LOW POINT)

a. Type EARTH

b. Width 10' TO 20' Length 190' (INCLUDING SPILLWAY)

c. Spillover CHUTE SPILLWAY

d. Location CENTER OF DAM

4. SPILLWAY

	SERVICE		AUXILIARY
a.	835	Elevation	N/A
b.	CHUTE	Type	
c.	56.5'	Width	
		Type of Control	
d.	✓	Uncontrolled	
		Controlled:	
e.		Type (Flashboards; gate)	
f.		Number	
g.		Size/Length	
h.	CONCRETE	Invert Material	
		Anticipated Length	
i.		of Operating Service	
j.	23'	Chute Length	
k.	0 (SLOPES UP TO WEIR)	Height Between Spillway Crest & Approach Channel Invert (Weir Flow)	
l.	N/A	Other	

4597

5. OUTLET STRUCTURES/EMERGENCY DRAWDOWN FACILITIES *

a. Type: Gate____ Sluice____ Conduit ✓ Penstock____

b. Shape CAST IRON PIPE W/ GATE ON U/S END

c. Size 27" DIAMETER, 30' ± LONG

d. Elevations: Entrance Invert 826 EST.

Exit Invert 825.6 ± (FIELD MEASUREMENT)

e. Tailrace Channel: Elevation 814 ± (PER FIELD MEASUREMENT D/S CHANNEL AT TOE OF DAM)

*ALSO 18" WATER SUPPLY MAIN, VALVED AT DAM & D/S FROM DAM AT OWNERS PLANT.

6. FLOOD WATER CONTROL SYSTEM

a. Warning System NONE.

b. Method of Controled Releases (mechanisms) 18" VALVE ON WATER SUPPLY MAIN & GATE ON OUTLET PIPE CAN BE OPERATED

7. CLIMATOLOGICAL GAGES REFERENCES 21 & 22

a. Type NON-RECORDING PRECIPITATION & TEMPERATURE GAGE INDEX # 3319

b. Location GLOVERSVILLE LAT. 43° 03', LONG. 74° 20' ~2 MILES FROM DAM

c. Period of Record 1891 TO PRESENT

d. Maximum Reading UNKNOWN Date____

8. STREAM GAGES REFERENCE 23

a. Type WATER - STAGE RECORDER USGS GAGE # 01348000

b. Location EAST CANADA CREEK AT EAST CREEK, NEW YORK

LAT. 43° 01' 00", LONG. 74° 44' 28" ~20 MILES WEST OF DAM

c. Period of Record 1945 TO PRESENT

d. Maximum Reading 13,300 cfs = 45.7 cms Date MARCH 14, 1977

9. OTHER

6169

10. DRAINAGE BASIN CHARACTERISTICS

a. Drainage Area 4.9 SQUARE MILES (3136 ACRES)

b. Land Use - Type FOREST & SOME RESIDENTIAL

c. Terrain - Relief SLOPES OF 5% TO 15%, SWAMPY NEAR POND

d. Surface - Soil GLACIAL TILL

e. Runoff Potential (existing or planned extensive alterations to existing surface or subsurface conditions)

NONE KNOWN.

f. Potential Sedimentation Problem Areas (natural or man-made; present or future)

POND IS FILLING UP W/ SEDIMENT, U/S END VERY SHALLOW DUE TO SEDIMENTATION.

g. Potential Backwater Problem Areas for Levels at Maximum Storage Capacity (including surcharge storage)

NONE KNOWN.

h. Dikes - Floodwalls (overflow & non-overflow) - Low Reaches Along the Reservoir perimeter

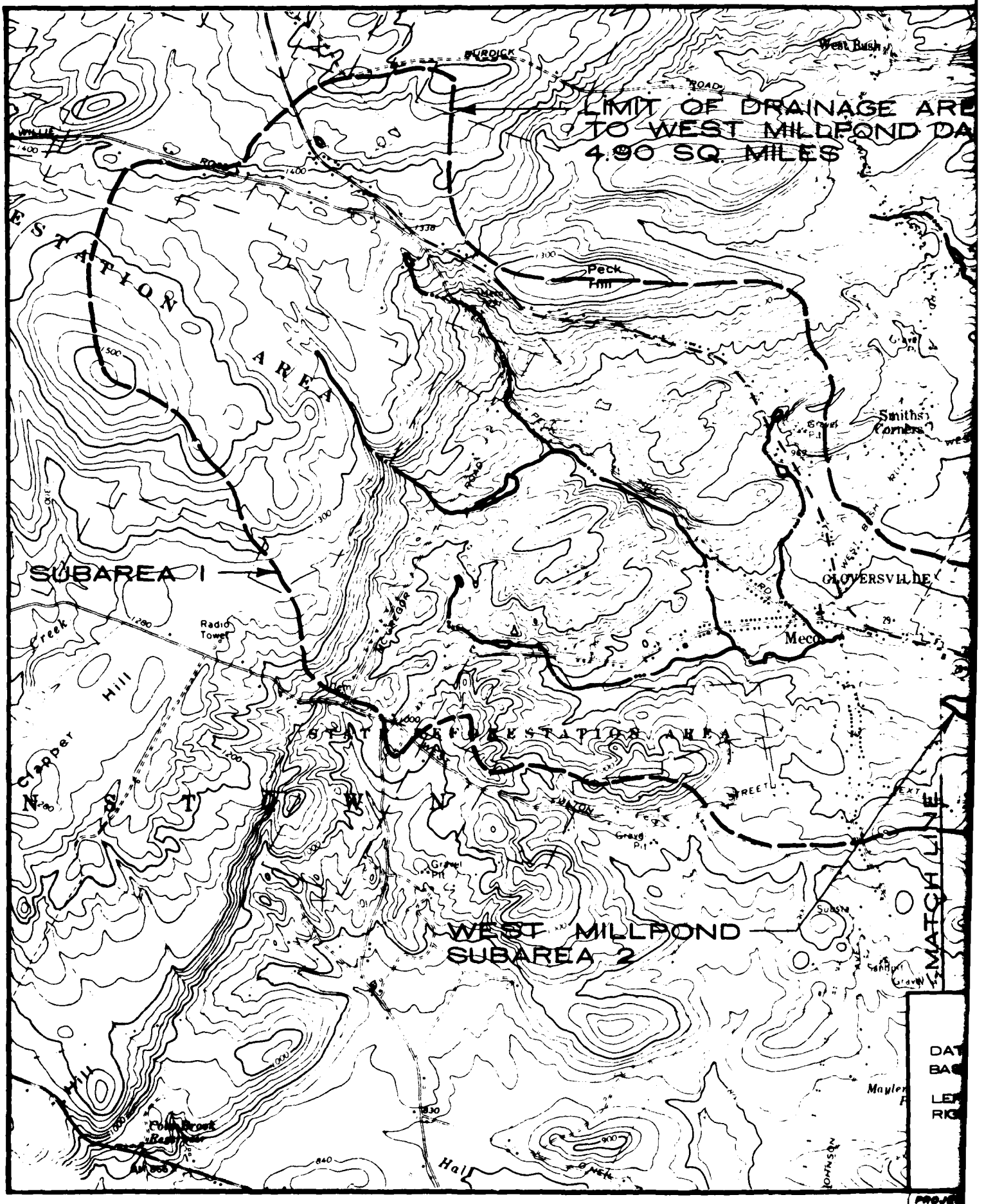
Location ALONG LEFT SIDE RESERVOIR 200' EARTH & CONCRETE DIKE MEETS DAM

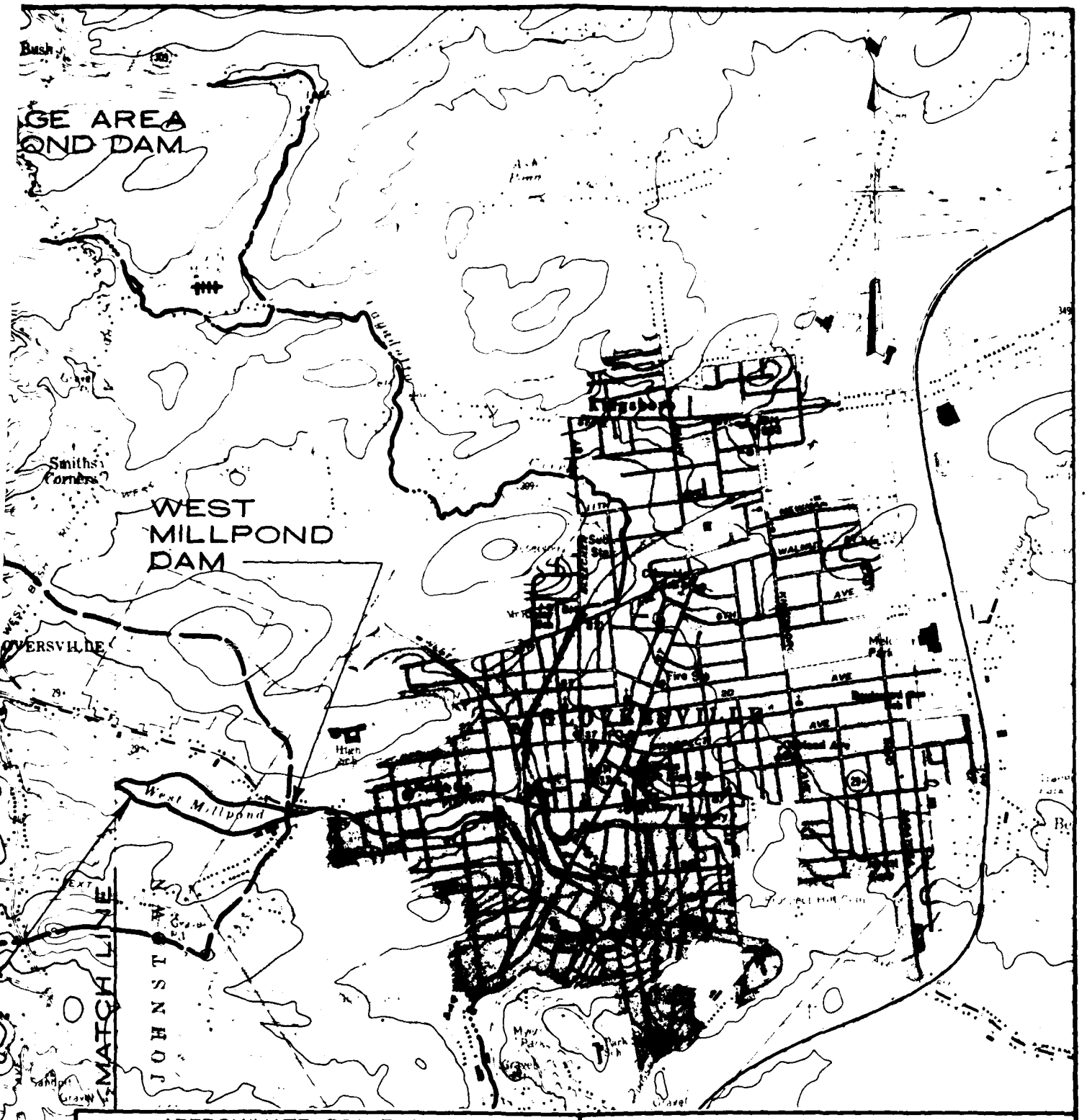
Elevation ABOUT EL 838 OR HIGHER

i. Reservoir

Length @ ~~Maximum Design~~ SPILLWAY CREST Pool 2400± (feet)

Length of Shoreline (@ ~~Service~~ Spillway Crest) 8400± (feet)


LIMIT OF DRAINAGE ARE
TO WEST MILLPOND DA
4.90 SQ. MILES
SUBAREA 1
WEST MILLPOND
SUBAREA 2
MATCH LINE
Peck Farm
Smiths Corners
GLOVERSVILLE
Radio Tower
Clapper Hill
Hall
West Bush
Gravel Pit



APPROXIMATE SCALE IN FEET
0 2000 4000

DATUM - NGVD 1929
BASE MAP - 7.5' USGS TOPO QUADS
20' CONTOUR INTERVAL
LEFT SIDE - PECK LAKE, NY - 1970
RIGHT SIDE - GLOVERSVILLE, NY - 1970

WEST MILLPOND DAM
DRAINAGE AREA MAP

CITY OF GLOVERSVILLE	FULTON CO., NY
SCALE: 1" = 2000'	DATE: JANUARY 1981

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COMPUTER SERVICES LANDSCAPE ARCHITECTURE LABORATORY SERVICES

JOB WEST MILLPOND DAM
SHEET NO. ____ OF ____
CALCULATED BY ELV DATE 6/16/81
CHECKED BY [illegible] DATE 8/13/81
SCALE 80.00854

ELEVATION - AREA - STORAGE COMPUTATIONS

RESERVOIR VOLUME: COMPUTED BY HAND USING THE METHOD OF CONIC SECTIONS $\Delta V_{1-2} = H/3(A_1 + A_2 + \sqrt{A_1 A_2})$

INPUT

	ELEVATION (NGVD)	AREA (4) (acres)	STORAGE (acre-feet)
	825 (1)	—	0
SPILLWAY CREST	835 (2)	26.3	123 (5)
TOP OF DAM	837.6 (3)	54.7 EST.	256 FROM COMPUTER OUTPUT
	840	81.0	379
	860	194.1	3,049

(1) ESTIMATED POND BOTTOM USING DEPTH INFORMATION FROM MAP OF POND DATED JUNE 1931 (APPENDIX G-1) & 1955 SKETCH BY NYS-DEC (APPENDIX F3-19)
(2) FROM "CHARACTERISTICS OF NEW YOR LAKES (GAZETTEER)" (REF. 25)
(3) FROM FIELD MEASUREMENTS. TOP OF DAM IS LOW POINT JUST TO RIGHT OF GATE HOUSE.
(4) FROM USGS CONTOUR MAPPING (APPENDIX C-5)
(5) FROM APPENDIX F3-26 STORAGE CAPACITY = 40 MG ≈ 123 ACRE-FEET

DRAINAGE AREA	AREA (acres)	AREA (square miles)
WATERSHED DIRECT TO RESERVOIR (SUBAREA 1)	3109.6	4.859
RESERVOIR SURFACE (SUBAREA 2) @ SPILLWAY CREST EL = 835	26.3	.041
TOTAL	3135.9	4.900

Form CTM-405

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JOB WEST MILLPOND DAM
SHEET NO. ____ OF ____
CALCULATED BY CLV DATE 6/16/81
CHECKED BY [illegible] DATE 8/13/81
SCALE 80.854

DRAINAGE AREA DATA FOR HEC-1 DB MODEL

SUBAREA 1: AREA TRIBUTARY DIRECTLY TO RESERVOIR
AREA = 4.859 SQUARE MILES.

LOSS RATES: 1.0" - INITIALLY
0.1"/HOUR - CONSTANT LOSS RATE

UNIT HYDROGRAPH PARAMETERS: USE SNYDER METHOD

A = DRAINAGE AREA = 4.859 SQUARE MILES
L = LENGTH OF MAIN WATERCOURSE TO UPSTREAM LIMIT OF DRAINAGE AREA = 3.84 MILES
L_{CA} = LENGTH ALONG MAIN WATERCOURSE TO POINT OPPOSITE THE CENTROID OF THE DRAINAGE AREA = 1.56 MILES
C_t = SNYDER'S BASIN COEFFICIENT = 2.0 ASSUMED AVERAGE
C_p = SNYDER'S PEAKING COEFFICIENT = .70 (FROM REF. 20)
t_p = STANDARD LAG IN HOURS = $C_t(LL_{CA})^{0.3}$ = 3.42 HOURS

REQ'D UNIT RAINFALL DURATION = t_r
$t_r = \frac{t_p}{5.5} = \frac{3.4}{5.5} = 0.62$ HR ≈ 37 MINUTES
USE t_r' = 10 MINUTES < 37 MINUTES MAX OK

∴ USE t_p = 3.4 HOURS

SUBAREA 2: RESERVOIR SURFACE, AREA = .041 SQ. MILES = 26.3 ACRES

LOSS RATES: NONE BECAUSE RAINFALL ≈ RUNOFF FOR WATER SURFACE

UNIT HYDROGRAPH PARAMETERS:

FOR U.H. W/ 10 MINUTE DURATION + 1" RAIN

$$\bar{Q} = \frac{A(1")}{t} = \frac{26.3 \text{ acres}(1")}{10 \text{ minutes}} \left(\frac{43{,}560 \text{ sq FT}}{1 \text{ acre}}\right)\left(\frac{1 \text{ FT}}{12 \text{ inches}}\right)\left(\frac{1 \text{ minute}}{60 \text{ seconds}}\right)$$

$\bar{Q}$ = 159 cfs (W/O LOSS RATE)

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JOB WEST MILLPOND DAM
SHEET NO ____ OF ____
CALCULATED BY EJV DATE 6/16/81
CHECKED BY [illegible] DATE 8/13/81
SCALE 80.00854

DISCHARGE COMPUTATIONS

DAM APPURTENANCE	ELEVATION (NGVD)	SIZE
SPILLWAY	CREST EL = 835	56.5' CREST LENGTH
DAM	CREST EL = 837.6 (LOW POINT)	133.5' CREST LENGTH (EXCLUDES SPILLWAY)
LOW LEVEL OUTLET	OUTLET INV. EL = 825.6 (FIELD MEASUREMENT)	27" CIP
WATER SUPPLY MAIN	UNKNOWN	18" CIP

FOR FLOW OVER SPILLWAY + DAM: $Q = 3.087 L H^{1.5}$ (FORMULA FOR CRITICAL FLOW OVER IDEAL BROAD-CRESTED WEIR, REFERENCE 9)
INPUT

	ELEVATION (NGVD)	$H_{SPILLWAY}$ (ft)	H_{DAM} (ft)	$Q_{WATER\ MAIN}$ (cfs)	Q_{OUTLET} (cfs)	$Q_{SPILLWAY}$ (cfs)	Q_{DAM} (cfs)	Q_{TOTAL} (cfs)
SPILLWAY CREST →	835	0	0	0	0	0	0	0
	836	1	0	ASSUMED CLOSED	ASSUMED CLOSED	174	0	174
	837	2	0			493	0	493
TOP OF DAM →	837.6	2.6	0			731	0	731 (SAY 730)
	838	3	.4			906	104	1,010
	839	4	1.4			1,395	683	2,078
	840	5	2.4			1,950	1,532	3,482

```
A NYD DAM INSPECTION: DACW51-81-C-0014
A NY01060, WEST PILLPOND DAM, 80.00854
A OVERTOPPING ANALYSIS WHOI
B    288       0      10                                          4
B1     5
J      1       2       1
J1   1.0     0.5
K      0    SA-1
K1 SUBAREA 1 RUNOFF COMPUTATION                                    1
M      1       1   4.859          10                                    1
P             19     111     123     132     142
T                                                 1.0     .10
W    3.4     .70
X     -2              1
K      0    SA-2                                  1
K1 SUBAREA 2 (RESERVOIR) RUNOFF COMPUTATION
M      1      -1   0.041          10                                    1
P             19     111     123     132     142
T                                                 0       0
U      1
U1   159
K     -2              1
K      2    SA-2C                                 1
K1 COMBINING HYDROGRAPHS 1 & 2
K      1     RES                      2           1
K1 ROUTING FLOWS THROUGH RESERVOIR
Y                                     1       1
Y1     1                                        -835       0
$S     0     123     379    3049
$E   825     835     840     860
$*   835    56.5   3.087     1.5
$D 837.6   3.087     1.5   133.5
K     99
A
A
A
A
A
```

```
**********
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION      JULY 1978
  LAST MODIFICATION  26 FEB 79
**********

RUN  DATE: 7/08/81
     TIME: 1:03 PM

NYD DAM INSPECTION: DACW51-81-C-0014
NY01060, WEST MILLPOND DAM, 80.00854
OVERTOPPING ANALYSIS MOD1

                                    JOB SPECIFICATION
     NO      NHR     NMIN     IDAY      IHR     IMIN    METRC     IPLT     IPRT    NSTAN
    200        0       10        0        0        0        0        0        4        0
                                JOPER      NRT   LKOPT    TRACE
                                    5        0        0        0

                                MULTI-PLAN ANALYSES TO BE PERFORMED
                                    NPLAN= 1 NRTIO= 2 LRTIO= 1
                          RTIOS=    1.00    0.50

**********      **********      **********      **********      **********
                                SUB-AREA RUNOFF COMPUTATION

                                                                        1
SUBAREA 1 RUNOFF COMPUTATION
                          ISTAQ   ICOMP   IECON   ITAPE    JPLT    JPRT   INAME  ISTAGE   IAUTO
                          SA=1        0       0       0       0       0       0       0       0

                                    HYDROGRAPH DATA
          IHYDG    IUHG    TAREA    SNAP   TRSDA   TRSPC   RATIO   ISNOW   ISAME   LOCAL
              1       1     4.66    0.00   10.00    0.00   0.000       0       1       0

                                    PRECIP DATA
                          SPFE     PMS      R6      R12      R24      R48      R72      R96
                          0.00   19.00   111.00   123.00   132.00   142.00    0.00     0.00
TRSPC COMPUTED BY THE PROGRAM IS 0.800

                                    LOSS DATA
          LKOPT   STRKR   DLTKR   RTIOL   ERAIN   STRKS   RTIOK   STRTL   CNSTL   ALSMX   RTIMP
              0    0.00    0.00    1.00    0.00    0.00    1.00    1.00    0.10    0.00    0.00

                                UNIT HYDROGRAPH DATA
                                    TP=  3.40    CP=0.70    NTA=  0

                                RECESSION DATA
                                STRTQ=   -2.00    QRCSN=    0.00    RTIOR= 1.00

                UNIT HYDROGRAPH 94 END-OF-PERIOD ORDINATES, LAG=  3.39 HOURS, CP= 0.69  VOL= 1.00
      8.      29.      59.      95.     135.     177.     222.     269.     316.     365.
    414.     464.     510.     550.     584.     612.     634.     650.     660.     664.
    661.     651.     632.     600.     561.     526.     492.     461.     432.     405.
    379.     355.     332.     311.     291.     273.     256.     239.     224.     210.
    197.     184.     172.     161.     151.     142.     133.     124.     116.     109.
    102.      96.      89.      84.      78.      74.      69.      64.      60.      57.
     53.      50.      46.      43.      41.      38.      36.      33.      31.      29.
     27.      26.      24.      23.      21.      20.      19.      17.      16.      15.
     14.      13.      13.      12.      11.      10.      10.       9.       8.       8.
      7.       7.       6.       6.
```

END-OF-PERIOD FLOW

MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
									SUM	21.58	17.94	3.65	312926.
										(548.)(456.)(93.)(8861.07)			

SUB-AREA RUNOFF COMPUTATION

SUBAREA 2 (RESERVOIR) RUNOFF COMPUTATION

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
SA-2	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

IHYDG	IUHG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	-1	0.04	0.00	10.00	0.00	0.000	0	1	0

PRECIP DATA

SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	19.00	111.00	123.00	132.00	142.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.800

LOSS DATA

LROPT	STRKR	DLTKR	RTIOL	ERAIN	STRKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00

RECESSION DATA

STRTQ= -2.00 QRCSN= 0.00 RTIOR= 1.00

END-OF-PERIOD FLOW

MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
									SUM	21.58	21.58	0.00	3433.
										(548.)(548.)(0.)(97.21)			

COMBINE HYDROGRAPHS

COMBINING HYDROGRAPHS 1 & 2

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
SA-2C	2	0	0	0	0	1	0	0

HYDROGRAPH ROUTING

ROUTING FLOWS THROUGH RESERVOIR

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
RES	1	0	0	2	0	1	0	0

ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP	LSTR
0.0	0.000	0.00	1	1	0	0	0

NSTPS	NSTDL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.000	0.000	0.000	-835.	0

CAPACITY= 0. 123. 379. 3049.

ELEVATION= 825. 835. 840. 860.

CREL	SPWID	COQW	EXPW	ELEVL	COQL	CAREA	EXPL
835.0	56.5	3.1	1.5	0.0	0.0	0.0	0.0

DAM DATA

TOPEL	COQD	EXPD	DAMWID
837.6	3.1	1.5	134.

PEAK OUTFLOW IS 7857. AT TIME 43.50 HOURS

PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
AREA IN SQUARE MILES (SQUARE KILOMETERS)

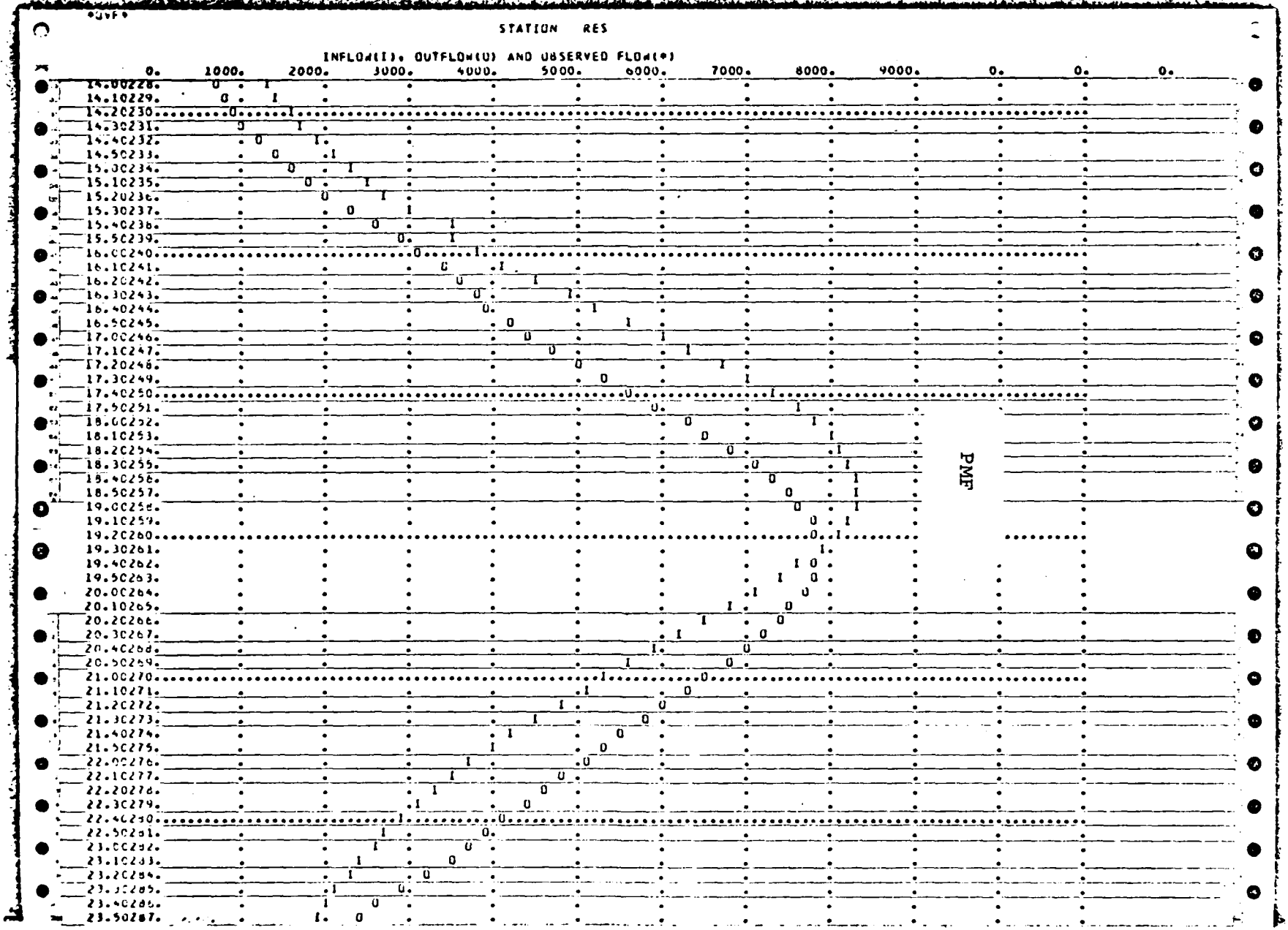
OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS RATIO 1	RATIO 2
				1.00	0.50
HYDROGRAPH AT	SA-1	4.86	1	8317.	4159.
		(12.58)		(235.52)(	117.76)(
HYDROGRAPH AT	SA-2	0.04	1	459.	229.
		(0.11)		(12.99)(	6.50)(
2 COMBINED	SA-2C	4.90	1	8321.	4161.
		(12.69)		(235.63)(	117.81)(
ROUTED TO	RES	4.90	1	7857.	3946.
		(12.69)		(222.50)(	111.73)(

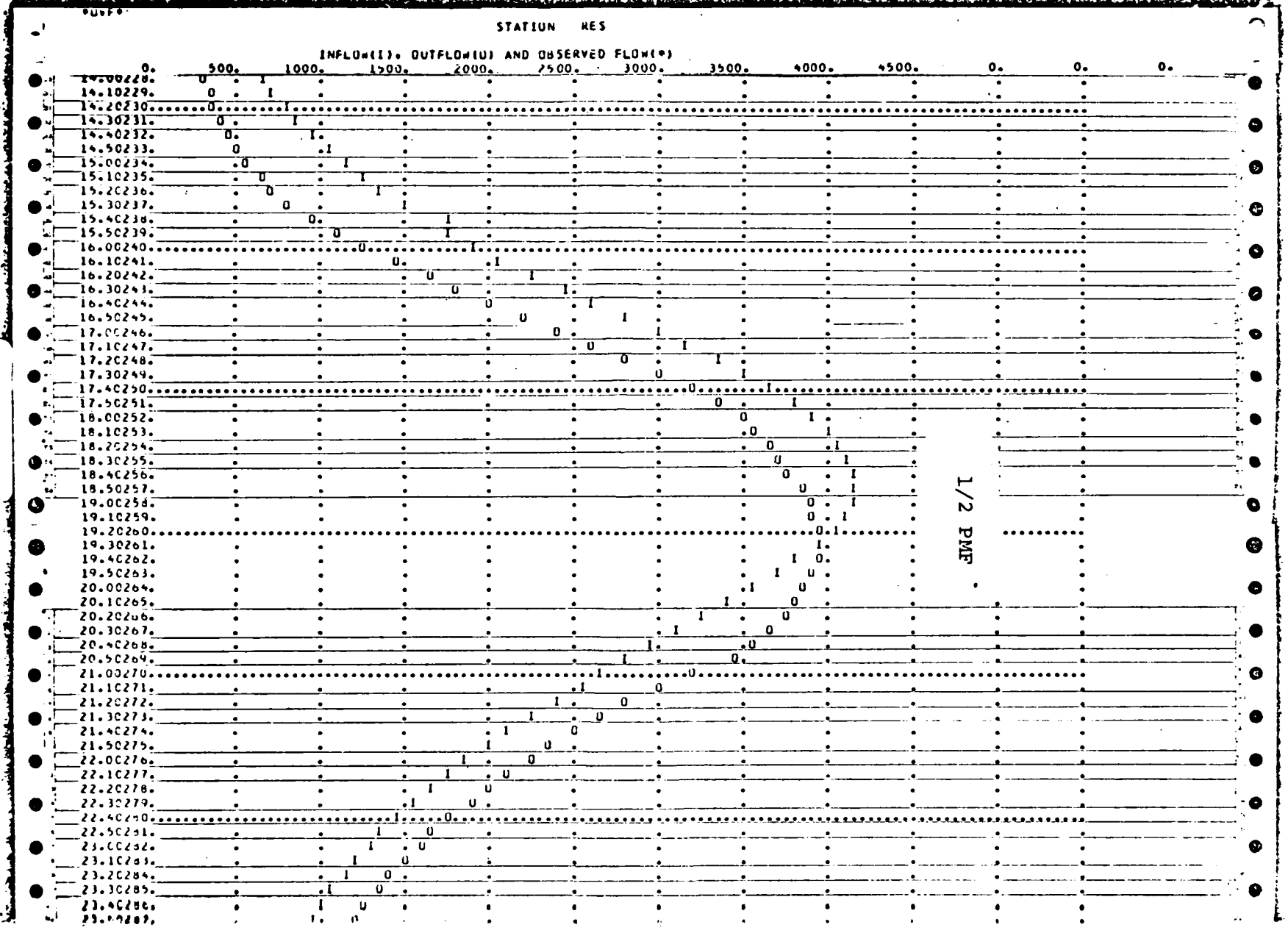
SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	835.00	835.00	837.60
STORAGE	123.	123.	256.
OUTFLOW	0.	0.	731.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	842.41	4.81	700.	7857.	10.00	43.50	0.00
0.50	840.29	2.69	418.	3946.	8.67	43.50	0.00


OVF
STATION RES
INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)
0. 1000. 2000. 3000. 4000. 5000. 6000. 7000. 8000. 9000. 0. 0. 0.
PMF


STATION RES
INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)
0. 500. 1000. 1500. 2000. 2500. 3000. 3500. 4000. 4500. 0. 0. 0.
1/2 PMF

APPENDIX D

STABILITY ANALYSIS

NO GRAVITY STRUCTURES TO ANALYZE

APPENDIX E

REFERENCES

WEST MILLPOND DAM, NY 01060

PHASE I INSPECTION REPORT

REFERENCES

This is a general list of references pertinent to dam safety investigations. Not all references listed have necessarily been used in this specific report.

1. "Engineering and Design, National Program For Inspection of Non-Federal Dams", ER 1110-2-106, Dept. of the Army, Office of the Chief of Engineers, 26 September 1979, with Change 1 of 24 March 1980. Included as Appendix D of the ER is "Recommended Guidelines For Safety Inspection of Dams".

2. "HEC-1 Flood Hydrograph Package, Users Manual", The Hydrologic Engineering Center, U.S. Army Corps of Engineers, January 1973.

3. "Flood Hydrograph Package (HEC-1), Users Manual for Dam Safety Investigations", The Hydrologic Engineering Center, U.S. Army Corps of Engineers, September 1978.

4. HMR 33, "Seasonal Variations of Probable Maximum Precipitation, East of the 105th Meridian for Areas 10 to 1000 Square Miles and Durations from 6 to 48 Hours," U.S. Dept. of Commerce, NOAA, National Weather Service, 1956.

5. HMR 51, "All-Season Probable Maximum Precipitation, U.S. East of 105th Meridian for Areas from 1000 to 20,000 Square Miles and Durations from 6 to 72 Hours", U.S. Dept. of Commerce, NOAA, National Weather Service, 1974.

6. HYDRO-35, "Five-to-60 Minute Precipitation Frequency for the Eastern and Central United States", U.S. Dept. of Commerce, NOAA, National Weather Service, June 1977.

7. "Technical Paper No. 40, Rainfall Frequency Atlas of the United States", U.S. Dept. of Commerce, Weather Bureau, 1961.

8. Design of Small Dams, United States Dept. of the Interior, Bureau of Reclamation, Second Edition, 1973, Revised Reprint, 1977.

9. King, Horace W. and Brater, Ernest F., Handbook of Hydraulics, fifth edition, McGraw-Hill Book Co., Inc., New York, N. Y., 1963.

10. "Flood Hydrograph Analyses and Computations", EM 1110-2-1405, U.S. Army Corps of Engineers, 31 August 1959.

11. "Technical Release No. 55, Urban Hydrology for Small Watersheds", U.S. Dept. of Agriculture, Soil Conservation Service (Engineering Division), January 1975.

12. National Engineering Handbook, Section 4, Hydrology, U. S. Dept. of Agriculture, Soil Conservation Service, August 1972.

13. "Hydraulic Design of Spillways", EM 1110-2-1603, U.S. Army Corps of Engineers, 31 March 1965, with Change 1 included.

14. "Standard Project Flood Determinations", EM 1110-2-1411, U.S. Army Corps of Engineers, 26 March 1952.

15. "Hydrologic and Hydraulic Assessment", Appendix D of EC 1110-2-188, U.S. Army Corps of Engineers, 30 December 1977.

16. "Reviews of Spillway Adequacy, National Program of Inspection of Non-Federal Dams", ETL 1110-2-234, U.S. Army Corps of Engineers, 10 May 1978.

17. Hammer, Mark J., Water and Waste-Water Technology, John Wiley & Sons, Inc., New York, 1975.

18. "Hydraulic Charts For the Selection of Highway Culverts", Hydraulic Engineering Circular No. 5, U.S. Department of Commerce, Bureau of Public Roads, December 1965.

19. "Guide for Making a Condition Survey of Concrete in Service", American Concrete Institute (ACI) Journal, Proceedings Vol. 65, No. 11, November 1968, pages 905-918.

20. "Upper Hudson & Mohawk River Basins, Hydrologic Flood Routing Models", New York District, Corps of Engineers, October 1976.

21. "Climatological Data, Annual Summary, New York, 1979", Volume 91, No. 13, National Oceanic and Atmospheric Administration, Asheville, North Carolina.

22. "Climatological Data, New York, September 1980", Volume 92, No. 9, National Oceanic and Atmospheric Administration, Asheville, North Carolina.

23. "Water Resources Data For New York, Water Year 1979", Volume 1, USGS Water-Data Report NY-79-1, U.S. Geological Survey, Albany, New York, 1980.

24. "Maximum Known Stages and Discharges of New York Streams Through 1973", Bulletin 72, U.S. Geological Survey, 1976.

25. "Characteristics of New York Lakes (Gazetteer)", Bulletin 68, U.S. Geological Survey and NYS Department of Environmental Conservation, 1970.

26. "Geologic Map of New York", Hudson-Mohawk Sheet, New York State Museum and Science Service, University of the State of N.Y., State Education Dept., Albany, N.Y., reprinted 1973.

27. "Landforms and Bedrock Geology of New York State", New York State Museum and Science Service, University of the State of N.Y., State Education Dept., Albany, N.Y., reprinted 1973.

28. Brigham, A.P., "Glacial Geology and Geographic Conditions of the Lower Mohawk Valley: A Survey of Amsterdam, Fonda, Gloversville, and Broadalbin Quadrangles", Bulletin of the New York State Geological Survey, 1929.

APPENDIX F

AVAILABLE ENGINEERING DATA AND RECORDS

TABLE OF CONTENTS

APPENDIX F

SECTION F1

LOCATION OF AVAILABLE ENGINEERING DATA AND RECORDS

1. Owner: Rovel Aqua, Inc.
P.O. Box 753
111 Woodside Avenue
Gloversville, NY 12078

Attn: Chris Chiappa, Chief Engineer
(518) 725-8691

Available: Correspondence, general data, and map of pond.

2. Designer: Unknown.

3. Construction Contractor: Unknown.

4. Agency: NYS Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233
Attn: George Koch, P.E., Chief, Dam Safety Section
(518) 457-5557

Available: Inspection reports, photo, letters.

NYS Department of Environmental Conservation
Division of Fish & Wildlife
50 Wolf Road
Albany, NY 12233
Attn: Patrick Festa, Supervising Aquatic Biologist
(518) 457-6937

Available: Data on the pond.

4585

PHASE I INSPECTION

CHECKLIST FOR GENERAL ENGINEERING DATA
& INTERVIEW WITH DAM OWNER

Name of Dam WEST MILLPOND DAM Fed. Id.# NY 01060

Date 6/3/81 Interviewer(s) TOM BENNEDUM

Dam Owner/Representative(s) Interviewed, Title & Phone#

RICHARD MCMILLAN SR., FOREMAN (518) 725-8691

CHRIS CHIAPPA, CHIEF ENGR. ROVEL AQUA INC. (518) 725-8691

1. OWNERSHIP (name, title, address & phone #)

ROVEL AQUA, INC, P.O. BOX 753, 111 WOODSIDE AVE., GLOVERSVILLE, NY 12078 ATTN: CHRIS CHIAPPA, CHEIF ENGR. (518) 725-8691
(ROVEL AQUA, INC IS A SUBSIDIARY OF LEE DYEING CO. OF N. CAROLINA)

2. OPERATOR (name, title, address & phone # of person responsible for day-to-day operation)

RICHARD MCMILLAN SR., FORMAN W/ LEE DYEING CO. OF N. CAROLINA, 111 WOODSIDE AVE, GLOVERSVILLE, NY 12078 (518) 725-8691

a. Operator Full/Part time PART TIME

3. PURPOSE OF DAM

a. Past PROCESS WATER FOR DYEING OPERATION - STOPPED DUE TO ALGAE PROBLEM IN POND

b. Present WATER STORAGE FOR USE W/ AIR POLLUTION EQUIPMENT (SCRUBBER) & AIR CONDITIONING EQUIPMENT @ 111 WOODSIDE AVE., 3500± D/S

4. DESIGN DATA

a. Designed When 1870±

b. By (name, address, phone #, business status)

UNKNOWN FOR DANIEL HAYS COMPANY

c. Geology Reports NONE KNOWN.

d. Subsurface Investigations NONE KNOWN.

e. Design Reports/Computations (H&H, stability, seepage)

NONE KNOWN.

f. Design Drawings (plans, sections, details) NONE KNOWN.

g. Design Specifications NONE KNOWN.

h. Other DRAWING OF POND (SEE APPENDIX G-1) & SKETCH OF POND (SEE APPENDIX F3-19)

5. CONSTRUCTION HISTORY

a. Initial Construction

1) Completed When 1870±

2) By (name, address, phone #, business status) UNKNOWN FOR DANIEL HAYS Co. (TANNERY)

3) Borrow Sources/Material Tests NONE KNOWN.

4) Construction Reports/Photos NONE KNOWN.

5) Diversion Scheme/Construction Sequence NONE KNOWN.

6) Construction Problems NONE KNOWN.

7) As-Built Drawings (plans, sections, details) NONE KNOWN.

8) Data on Electrical & Mechanical Equipment Affecting Safe Operation of Dam NONE KNOWN.

9) Other N/A

4576

b. Modifications (review design data & initial construction items as applicable & describe)

• 1912-1913 - CONCRETE FACING WORK TO STONE MASONRY OF DAM

• 1918-1919 - SPILLWAY WIDENED

• 1940's - SPILLWAY SECTION PAVED + 18" CAST IRON SUPPLY MAIN WAS INSTALLED INSIDE OLD 5' SLUICE FROM DAM

c. Repairs & Maintenance (review design data & initial construction items as applicable & describe)

• 1973 - FREED GATE ON 27" OUTLET PIPE. ALSO DID CONCRETE PATCHING TO SPILLWAY TRAINING WALLS + WALL TO LEFT OF SPILLWAY. DONE BY A LOCAL MASON, THOMAS RANDALL, NO LONGER IN BUSINESS

• SPRING 1980 DRAINED POND FOR ALGAE CONTROL + REFILLED. NO SILT NOTED AGAINST SPILLWAY.

6. OPERATION RECORD

a. Past Inspections (dates, by, authority, results)
4 BY NY S CONSERVATION COMMISSION BETWEEN SEPT. 1913 + MAY, 1919 (SEE APPENDICES F3-1 TO F3-18 + PHOTO ON F3-19)
SEPT 18, 1970 BY NYS-DEC (SEE APPENDIX F3-20)
JULY 17, 1979 BY C.R. ACKERBAUER, P.E. FOR OWNER (SEE LETTER, APPENDIX F3-23)
SEE 9 OTHER

b. Performance Observations (seepage, erosion, settlement, post-construction surveys, instrumentation & monitoring records) NONE KNOWN. OWNER NOTES LAKE SHALLOWER NOW THAN IN PAST + THAT THERE IS ALWAYS OPEN WATER BETWEEN ICE + SPILLWAY

c. Post-Construction Engineering Studies/Reports

NONE KNOWN.

d. Routine Rainfall, Reservoir Levels & Discharges

NONE KNOWN.

4564

e. Past Floods That Threatened Safety (when, cause, discharge, max. pool elevation, any damage)

APRIL 1975 HIGHEST WATER LEVEL, 1½" BELOW CONCRETE WALL TO RIGHT OF GATE HOUSE MEASURED BY RICHARD MCMILLAN

f. Previous Failures (when, cause, describe)

NONE.

g. Earthquake History (seismic activity in vicinity of dam)

NONE KNOWN.

7. VALIDITY OF DESIGN, CONSTRUCTION & OPERATION RECORDS (note any apparent inconsistencies)

LIMITED DATA APPEARS VALID

8. OPERATION & MAINTENANCE PROCEDURES

a. Operation Procedures in writing? NO Obtain copy or describe. (reservoir regulation plan, normal pool elevation and status of operating facilities, who operates & means of communication to controller, mode of operating facilities, i.e., manual, automatic, remote)

- NO FLASHBOARDS, OUTLET GATE NORMALLY CLOSED AS MUCH AS POSSIBLE - WATER LEVEL NORMALLY AT SPILLWAY CREST
- EXCERCISE GATE ONCE/YEAR, LAST OPENED SPRING 1981
- 18" VALVE NORMALLY FULL OPEN TO PLANT, BUT 8" VALVE ON D/S END ONLY 1/4 OPEN; BYPASSING SOME FLOW OFF TO CREEK. WATER FOR PLANT DRAWN OFF BY 2" PIPE (DRAFT UNKNOWN)
- GATE ON OUTLET PIPE ESTIMATED TO LEAK AT 500 GPM

b. Maintenance Procedures in writing? NO Obtain copy or describe.

- CUT BRUSH YEARLY (SINCE 1972)
- EXERCISE GATE + VALVE YEARLY
- OPERATOR VISITS DAM SEVERAL TIMES EACH WEEK

c. Emergency Action Plan & Warning System in Writing? NO
Obtain copy or describe. (actions to be taken to minimize the D/S effects of an emergency)

• ONLY CONCERNED IN 1975 BUT NO ONE CONTACTED

9. OTHER

6.a.

JULY 18, 1979 LETTER BY NYS-DEC CONCERNING INSPECTION (SEE APPENDIX F3-24)
MAY 6, 1980 BY NYS-DEC (SEE APPENDIX F3-25)

APPENDIX F

SECTION F3

COPIES OF ENGINEERING DATA AND RECORDS

TABLE OF CONTENTS

DANIEL HAYS, President

Established 1854
Incorporated 1904

LEWIS A. TATE, Vice-President and Treasurer

THE DANIEL HAYS COMPANY
MANUFACTURERS OF
PLYMOUTH BUCK GLOVES AND MITTENS
KID GAUNTLETS, MOCHAS

CONSERVATION COMMISSION
COM'R MOORE
SEP 16 1913
RECEIVED

SEP 25 1913
DIVISION INLAND WATERS
Chief Engineer
To Inspector of Hatcheries
DMS

Gloversville, N.Y., Sept. 9, 1913. 191

RECEIVED
SEP 16 1913
DIVISION INLAND WATERS
J. D. M.

The Conservation Commission,

Albany, N. Y.

Gentlemen:

We are in receipt of a personal letter addressed to Mr. Daniel Hays, who died June 25th last, and we herewith reply.

We beg to advise that we have made no alterations on what we call our West Mill Dam. We simply faced a part of the North wall of the Pond and the front of the Dam with Concrete so as to stop leaking, but we did take a foot off the top of the Dam.

We did not know about applications or anything regarding that matter. We did our repairing and it was finished last week.

We do not own another Dam in Gloversville. There used to be a little old Dam just this side of our West Mill Dam, but we are not using this any longer.

We believe this answers your letter in full, but at the same time, if there is something else for us to do in the matter, kindly let us know, or when some of your people come up this way, we would be real glad to have the pleasure of seeing them and giving them all the information that is in our power.

Awaiting your early reply, we are,

Yours very truly,

The Daniel Hays Company,

Lewis A. Tate Treas.

DEC

F3-1

Form W51. S-12-16-2000 (16-16758) Acc. 382

(NOTICE: After filling out one of these forms as completely as possible for each dam in your district, return it at once to the Conservation Commission, Albany.)

STATE OF NEW YORK

CONSERVATION COMMISSION

ALBANY

DAM REPORT

August (Date), 1917

CONSERVATION COMMISSION,

DIVISION OF WATERS.

GENTLEMEN:

I have the honor to make the following report in relation to the structure known as the West Mill 172-392 Mch Dam.

This dam is situated upon the Cayadutta Creek (Give name of stream)

in the Town of Johnstown, Fulton County,

about ——— (State distance) from the Village or City of Gloversville

The distance down (Up or down) stream from the dam, to the ——— (Give name of nearest important stream or of a bridge),

is about ½ mile (State distance).

The dam is now owned by Daniel Sager Co. Gloversville (Give name and address in full)

and was built in or about the year 1870, and was extensively repaired or reconstructed during the year 1912.

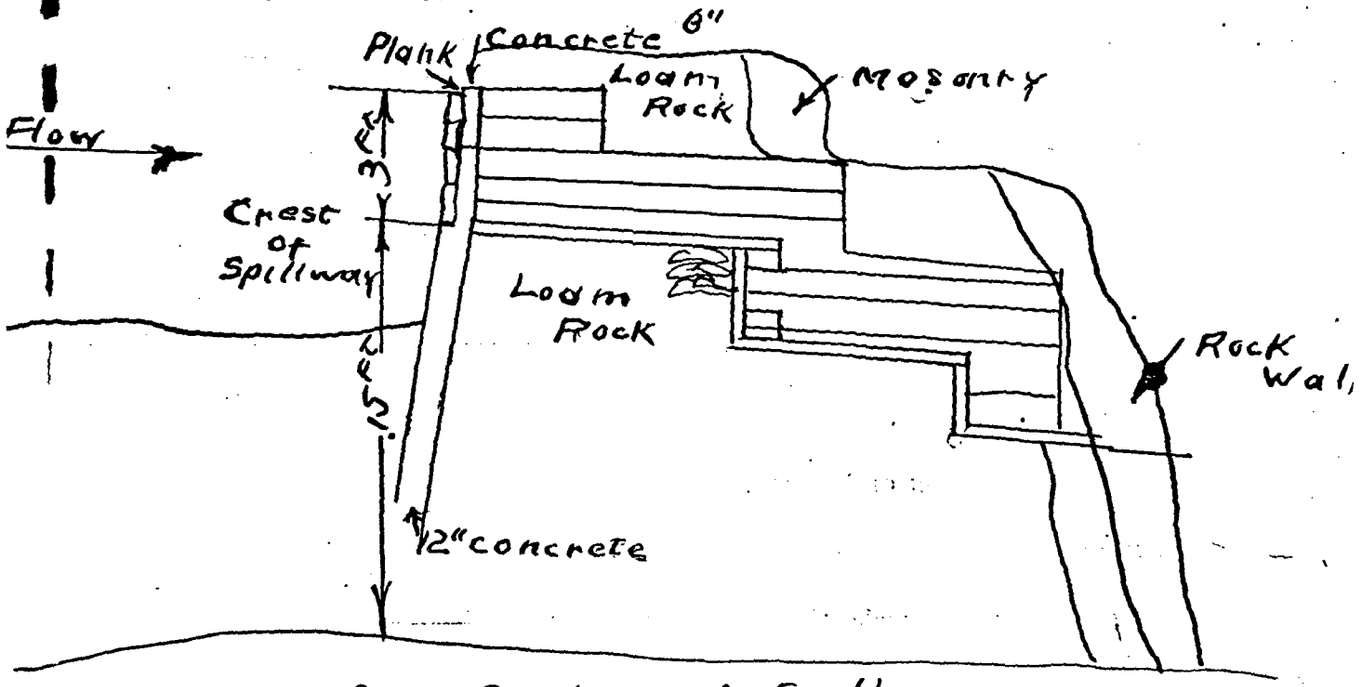
As it now stands, the spillway portion of this dam is built of timber & concrete (State whether of masonry, concrete or timber)

and the other portions are built of concrete & earth with rock fill (State whether of masonry, concrete, earth or timber with or without rock fill)

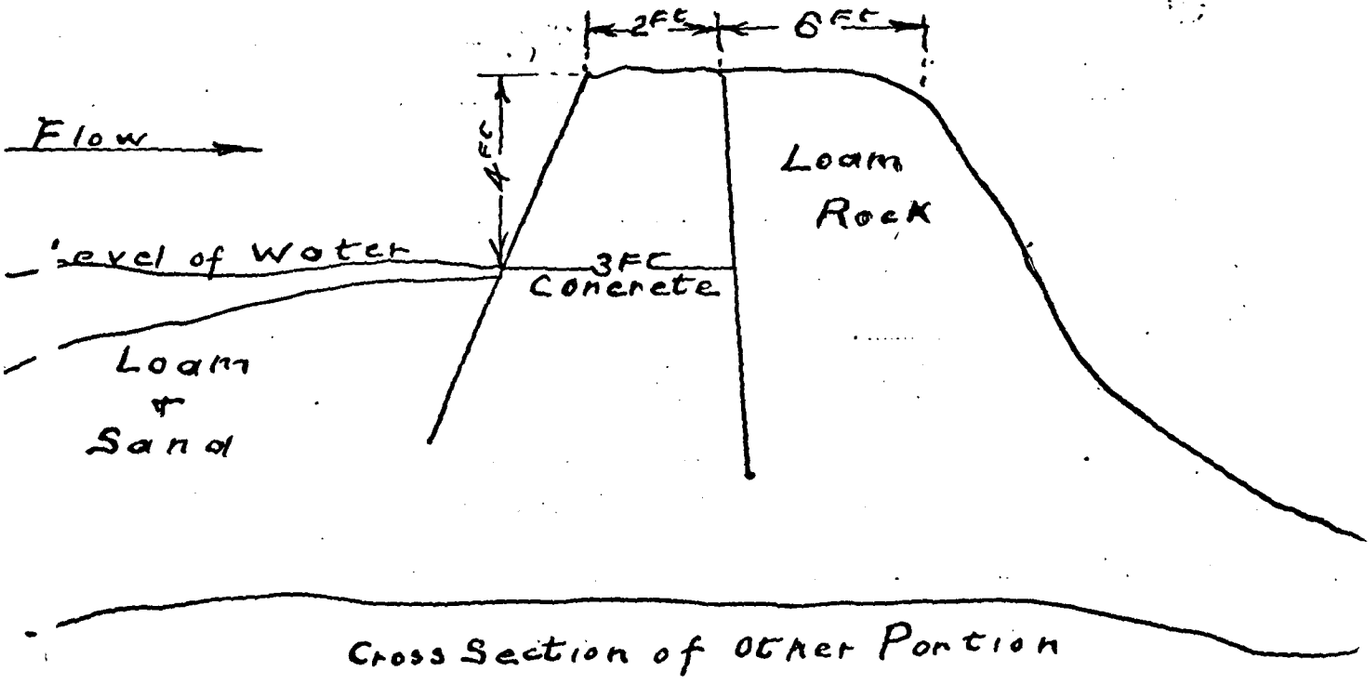
As nearly as I can learn, the character of the foundation bed under the spillway portion of the dam is gravel and under the remaining portions such foundation bed is loam.

DEC

(In the space below, make a third sketch showing the general plan of the dam, and its approximate position in relation to buildings or other conspicuous objects in the vicinity.)



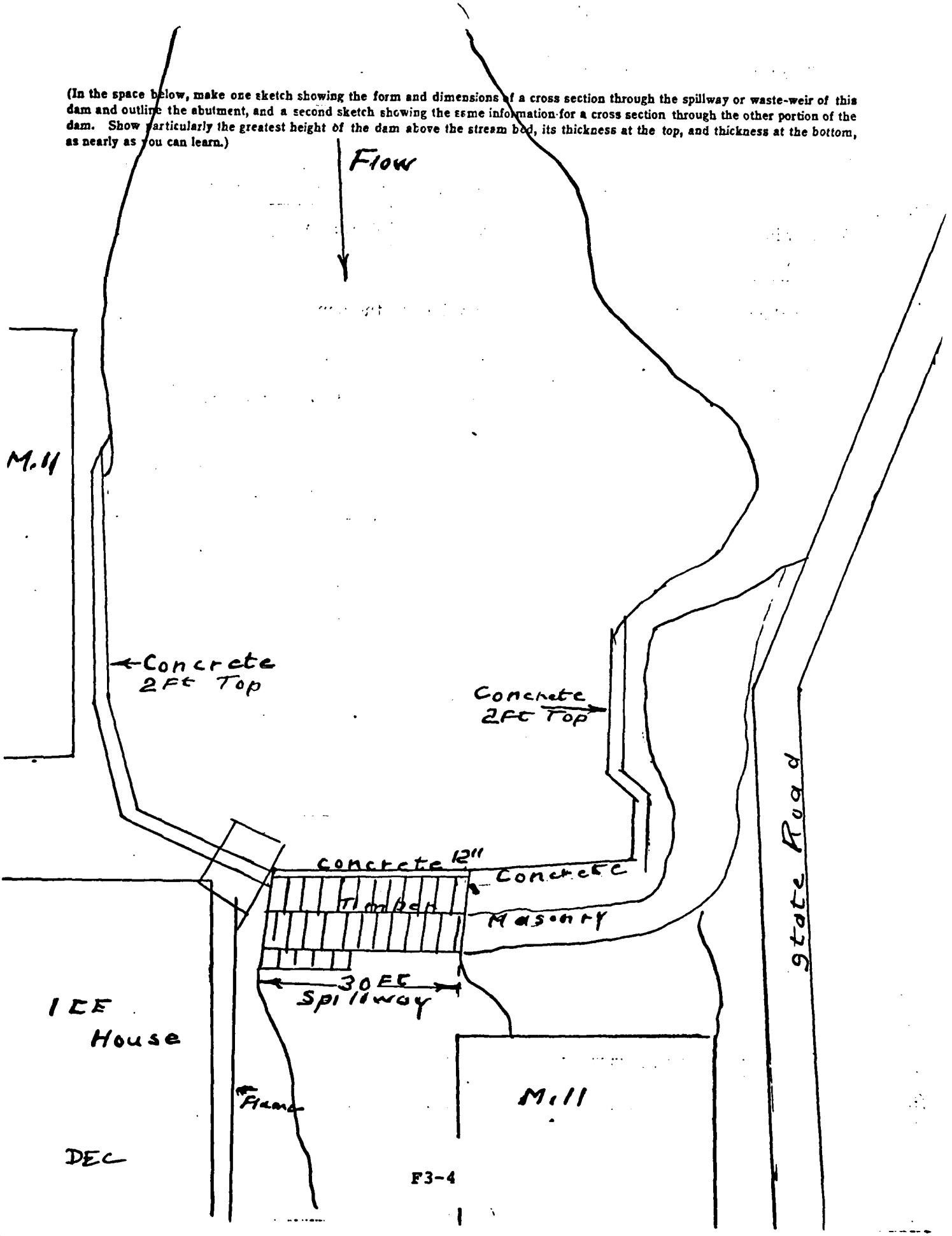
Cross Section of Spillway



Cross Section of other Portion

DEC

(In the space below, make one sketch showing the form and dimensions of a cross section through the spillway or waste-weir of this dam and outline the abutment, and a second sketch showing the same information for a cross section through the other portion of the dam. Show particularly the greatest height of the dam above the stream bed, its thickness at the top, and thickness at the bottom, as nearly as you can learn.)



The total length of this dam is 200 feet. The spillway or waste-weir portion, is about 30 feet long, and the crest of the spillway is about ~3 feet below the abutment.

The number, size and location of discharge pipes, waste pipes or gates which may be used for drawing off the water from behind the dam, are as follows: one flasnes 3 ft dia

At the time of this inspection the water level above the dam was - ft. 6 in. below ~~above~~ the crest of the spillway.

(State briefly, in the space below, whether, in your judgment, this dam is in good condition, or bad condition, describing particularly any leaks or cracks or erosions which you may have observed.)

The dam is in good condition
There are no leaks or erosions
The mill would be seriously damaged
should the dam go out.

Reported by Edwin Kenneth
(Signature)

314 N Main
(Address—Street and number, P. O. Box or R. F. D. route)

Johnstown N.Y.
(Name of place)

DEC

Form W51. 5-12-16-2000 (16-1675S) Acc. 382

(NOTICE: After filling out one of these forms as completely as possible for each dam in your district, return it at once to the Conservation Commission, Albany.)

172-392 Moh

STATE OF NEW YORK
CONSERVATION COMMISSION
ALBANY

DAM REPORT

September (Date), 1917

CONSERVATION COMMISSION,

DIVISION OF WATERS.

GENTLEMEN:

I have the honor to make the following report in relation to the structure known as the West Mill Co. 172-392 Dam.

This dam is situated upon ~~the~~ a branch of the Canadaiga Creek (Give name of stream)
in the Town of Johnstown, Fulton County,
about ½ mile (State distance) from the Village or City of Gloversville
The distance down (Up or down) stream from the dam, to the West Point bridge (Give name of nearest important stream or of a bridge),
is about 20 rd. (State distance).

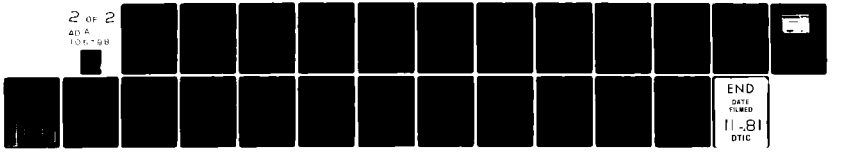
The dam is now owned by West Mill Co. Gloversville N.Y. (Give name and address in full)
and was built in or about the year 1870, and was extensively repaired or reconstructed during the year 19--.

As it now stands, the spillway portion of this dam is built of timber & concrete (State whether of masonry, concrete or timber)
and the other portions are built of concrete & masonry (State whether of masonry, concrete, earth or timber with or without rock fill)

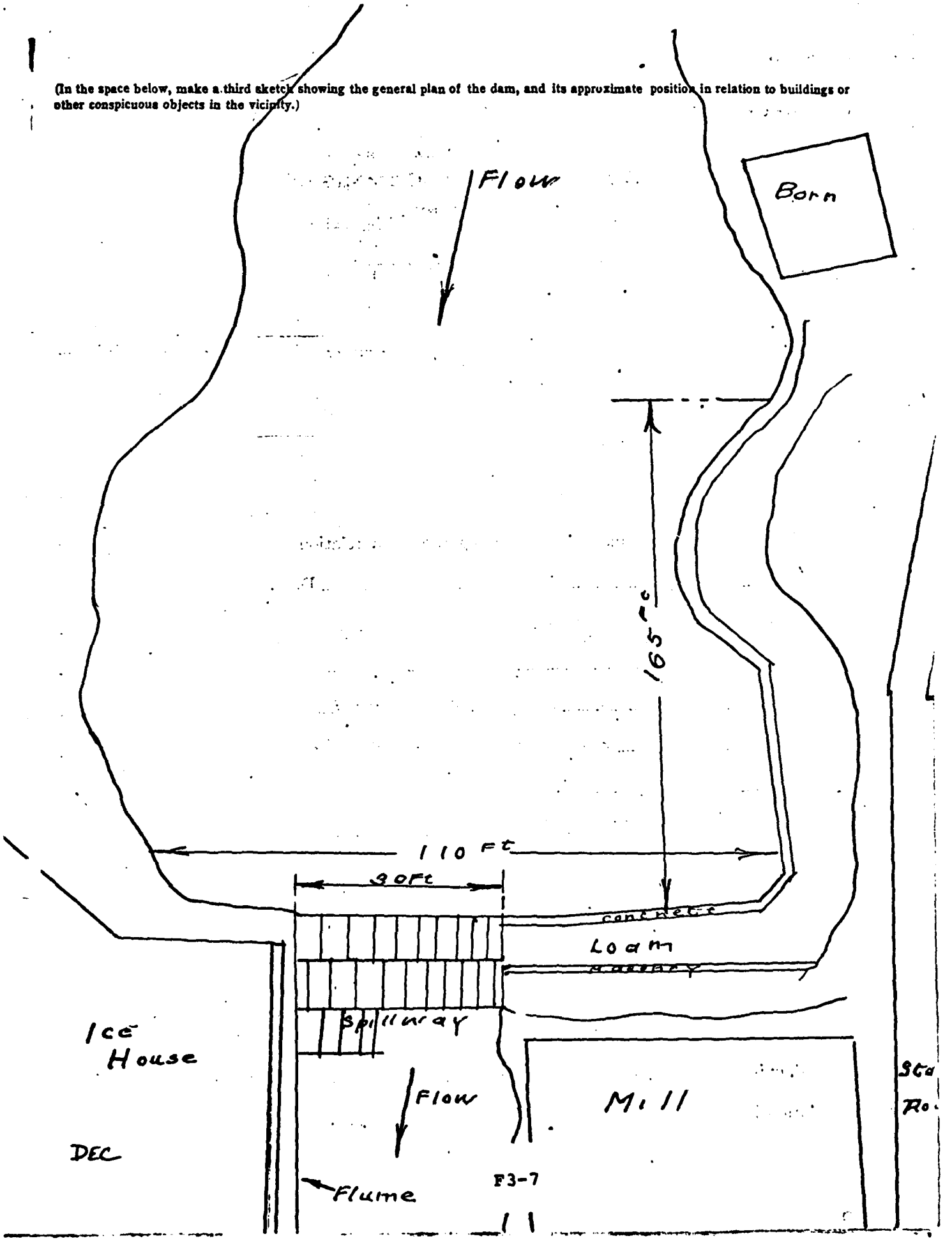
As nearly as I can learn, the character of the foundation bed under the spillway portion of the dam is gravel and under the remaining portions such foundation bed is loam.

DEC

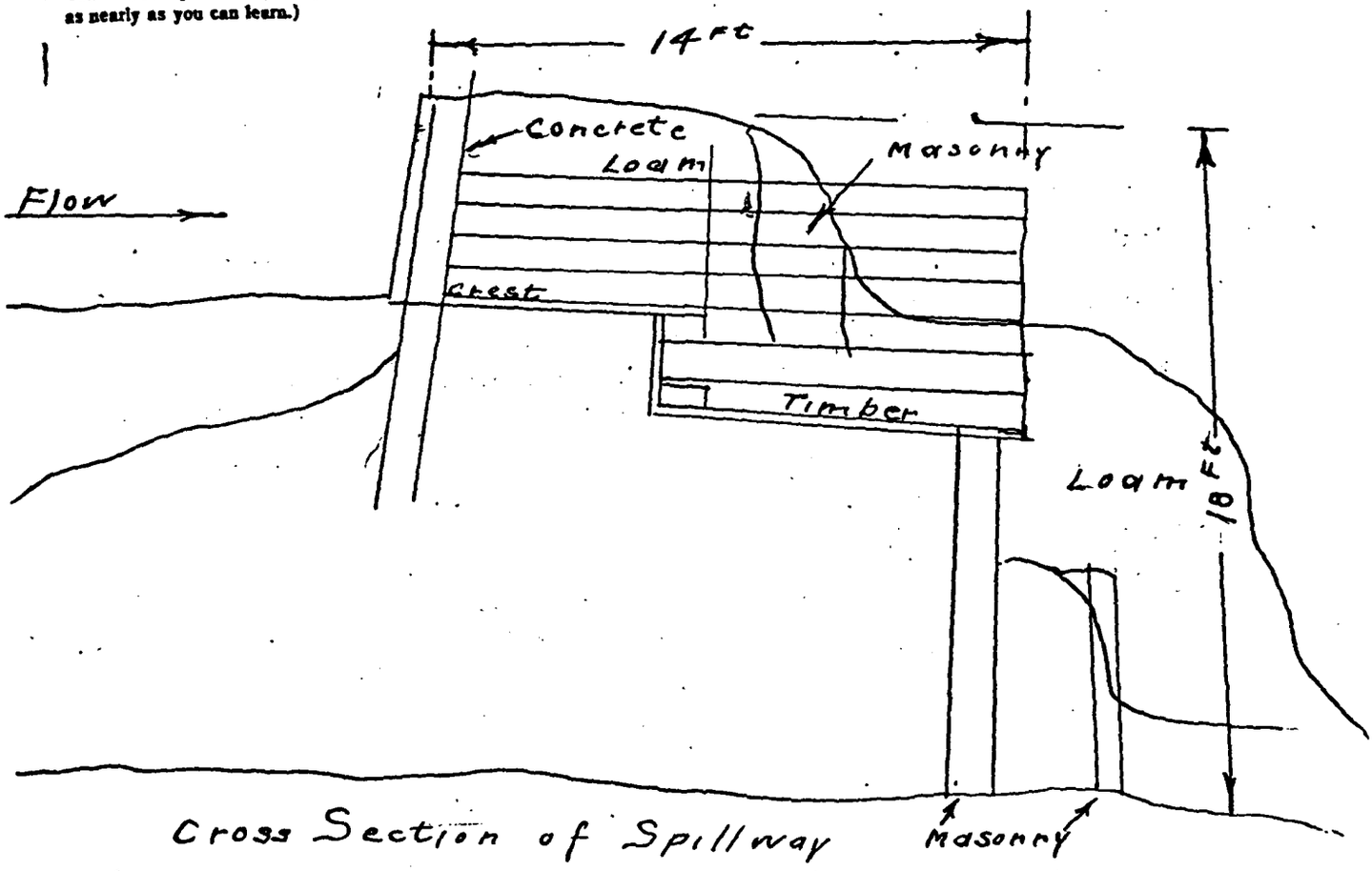
AD-A105 798 MALE (C T) ASSOCIATES SCHENECTADY NY F/G 13/13
NATIONAL DAM SAFETY PROGRAM. WEST MILLPOND DAM (NY 01060), MOHA--ETC(U)
SEP 81 K J MALE DACW51-81-C-0014
UNCLASSIFIED NL



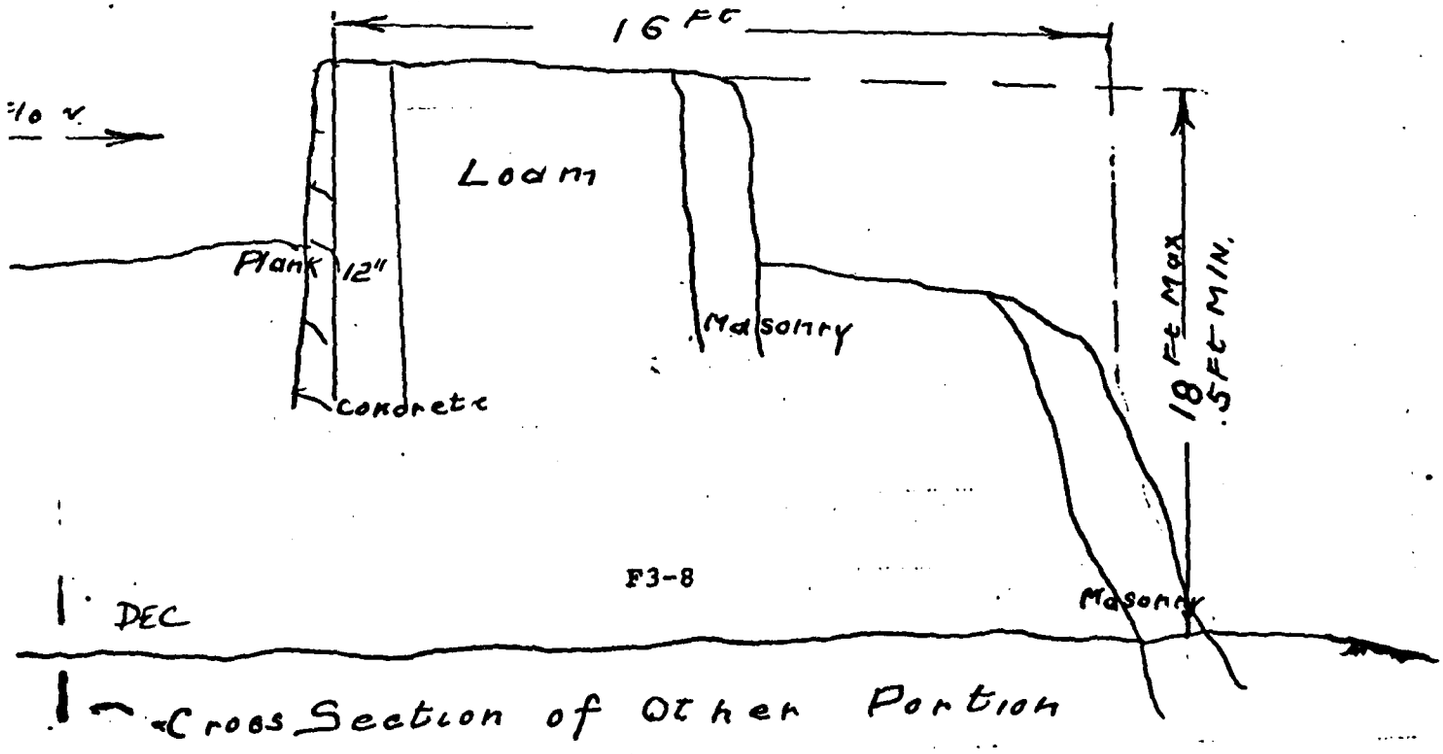
(In the space below, make a third sketch showing the general plan of the dam, and its approximate position in relation to buildings or other conspicuous objects in the vicinity.)



(In the space below, make one sketch showing the form and dimensions of a cross section through the spillway or waste-weir of this dam and outline the abutment, and a second sketch showing the same information for a cross section through the other portion of the dam. Show particularly the greatest height of the dam above the stream bed, its thickness at the top, and thickness at the bottom, as nearly as you can learn.)



Cross Section of Spillway



DEC

Cross Section of Other Portion

The total length of this dam is 275 feet. The spillway or waste-weir portion, is about 30 feet long, and the crest of the spillway is about 3 feet below the abutment.

The number, size and location of discharge pipes, waste pipes or gates which may be used for drawing off the water from behind the dam, are as follows: one flume 2 ft 6" diameter

At the time of this inspection the water level above the dam was — ft. 4 in. ~~above~~ below the crest of the spillway.

(State briefly, in the space below, whether, in your judgment, this dam is in good condition, or bad condition, describing particularly any leaks or cracks or erosions which you may have observed.)

The dam is in good condition
There are no erosions, cracks, or leaks
The mill would be damaged seriously should the dam go out.

Reported by Edwin Kasmer
(Signature)

314 Main St
(Address—Street and number, P. O. Box or R. F. D. route)

Johnstown N.Y.
(Name of place)

DEC

Form IW-1 6-18-12 8000 (16-1-258)

(NOTICE: After filling out one of these forms as completely as possible for each dam in your district, return it at once to the Conservation Commission, Albany.)

STATE OF NEW YORK

CONSERVATION COMMISSION

ALBANY

RECEIVED

SEP 16 1913

DIVISION INLAND WATERS

J. D. M.

DAM REPORT

Sept 10 (Date), 1913

CONSERVATION COMMISSION,

DIVISION OF INLAND WATERS.

GENTLEMEN:

I have the honor to make the following report in relation to the structure known as the West Mill Dam.

This dam is situated upon the Meco Creek (Give name of stream)

in the ~~Town~~ City of Gloversville, Fulton County,

about 1 mile (State distance) from the ~~Village or~~ Center City of Gloversville.

The distance down (Up or down) stream from the dam, to the Rose St bridge (Give name of nearest important stream or of a bridge)

is about 500 ft (State distance).

The dam is now owned by The Daniel Hays Co (Give name in full)

and was built in or about the year 1840, and was extensively repaired or reconstructed during the year 1908.

As it now stands, the spillway portion of this dam is built of Wood. Concrete Batts (State whether of masonry, concrete or timber)

and the other portions are built of Earth & stone concrete faced (State whether of masonry, concrete, earth or timber with or without rock fill)

As nearly as I can learn, the character of the foundation bed under the spillway portion of the dam is Gravel and under the remaining portions such foundation bed is Gravel.

DEC

As to location of buildings below dam there is numerous mills and store houses along creek for a distance of four or five miles but no dwellings except the condition of water and offensive odor from mill refuse and sewage in former times.

I inclose herewith ~~which~~ letter which Mr. L. A. Tate Treasurer and manager of the Daniel Hays Co had written me and turned over to me when interviewed regarding dam, which makes plain the repairs in connection the dam on question

Yours C. H. Wharton

DEC

The total length of this dam is 180 feet. The spillway or waste-weir portion, is about 60 feet long, and the crest of the spillway is about 12 feet below the top of the dam.

The number, size and location of discharge pipes, waste pipes or gates which may be used for drawing off the water from behind the dam, are as follows: 4 f.t Wash Gate 4 f.t Sluice Gate

State briefly, in the space below, whether, in your judgment, this dam is in good condition, or bad condition, describing particularly any leaks or cracks which you may have observed.)

This dam is in first class condition the repairs not being necessary but done as a safeguard and to stop minor leakage

Reported by C. H. Masten
(Signature)

116 First Ave
(Address—Street and number, P. O. Box or R. F. D. route)

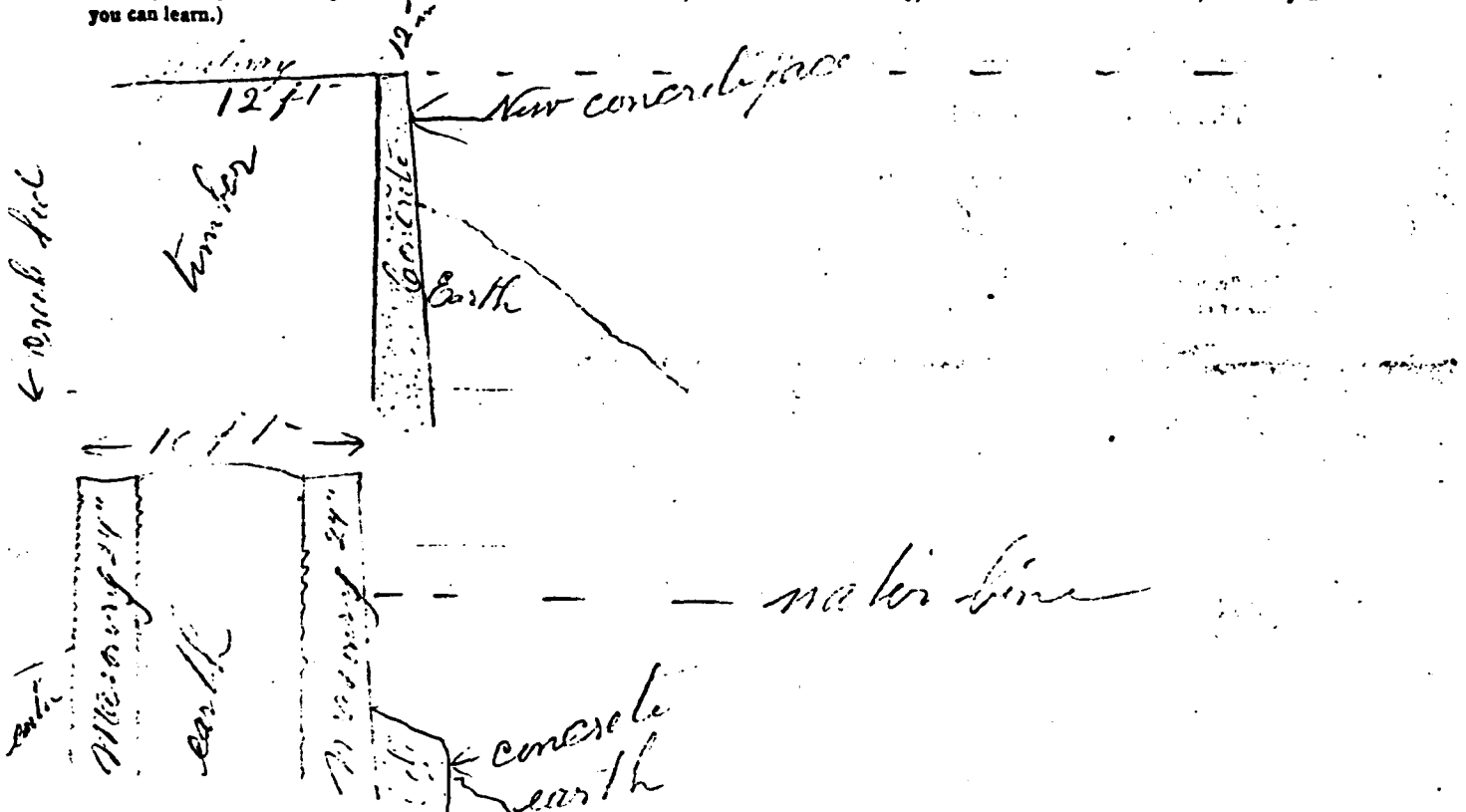
Monroe Wis
(Name of place)

(SEE OTHER SIDE)

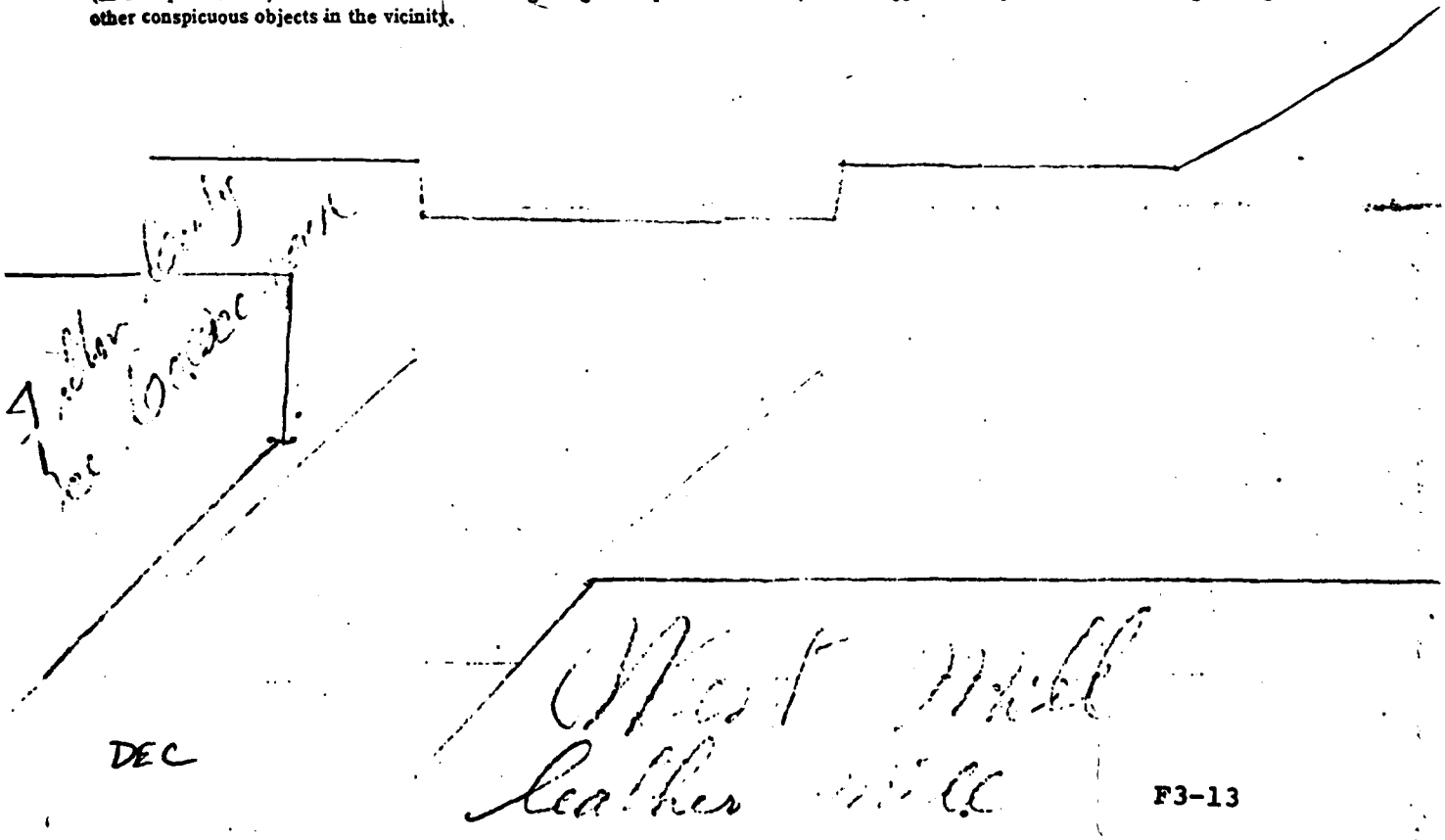
DEC

F3-12

(In the space below, make one sketch showing the form and dimensions of a cross section through the spillway or waste-weir of this dam, and a second sketch showing the same information for a cross section through the other portion of the dam. Show particularly the greatest height of the dam above the stream bed, its thickness at the top, and thickness at the bottom, as nearly as you can learn.)



(In the space below, make a third sketch showing the general plan of the dam, and its approximate position in relation to buildings or other conspicuous objects in the vicinity.



Form W31. 5-12-16-2000 (16-1675S) Acc. 383

(NOTICE: After filling out one of these forms as completely as possible for each dam in your district, return it at once to the Conservation Commission, Albany.)

STATE OF NEW YORK

CONSERVATION COMMISSION

ALBANY

DAM REPORT

June 19, 1916
(Date)

CONSERVATION COMMISSION,

DIVISION OF WATERS.

GENTLEMEN:

I have the honor to make the following report in relation to the structure known as the Daniel Hays S-172-392 Mod. Dam.

This dam is situated upon the Branch of the Canadutta Creek
(Give name of stream)
in the Town of Malone, Franklin County,
about 1 (State distance) ~~from~~ the Village or City of Malone
The distance up stream from the dam, to the Malone-Paul Smiths State Road
(Up or down) (Give name of nearest important stream or of a bridge)
is about 5 rds. (State distance)

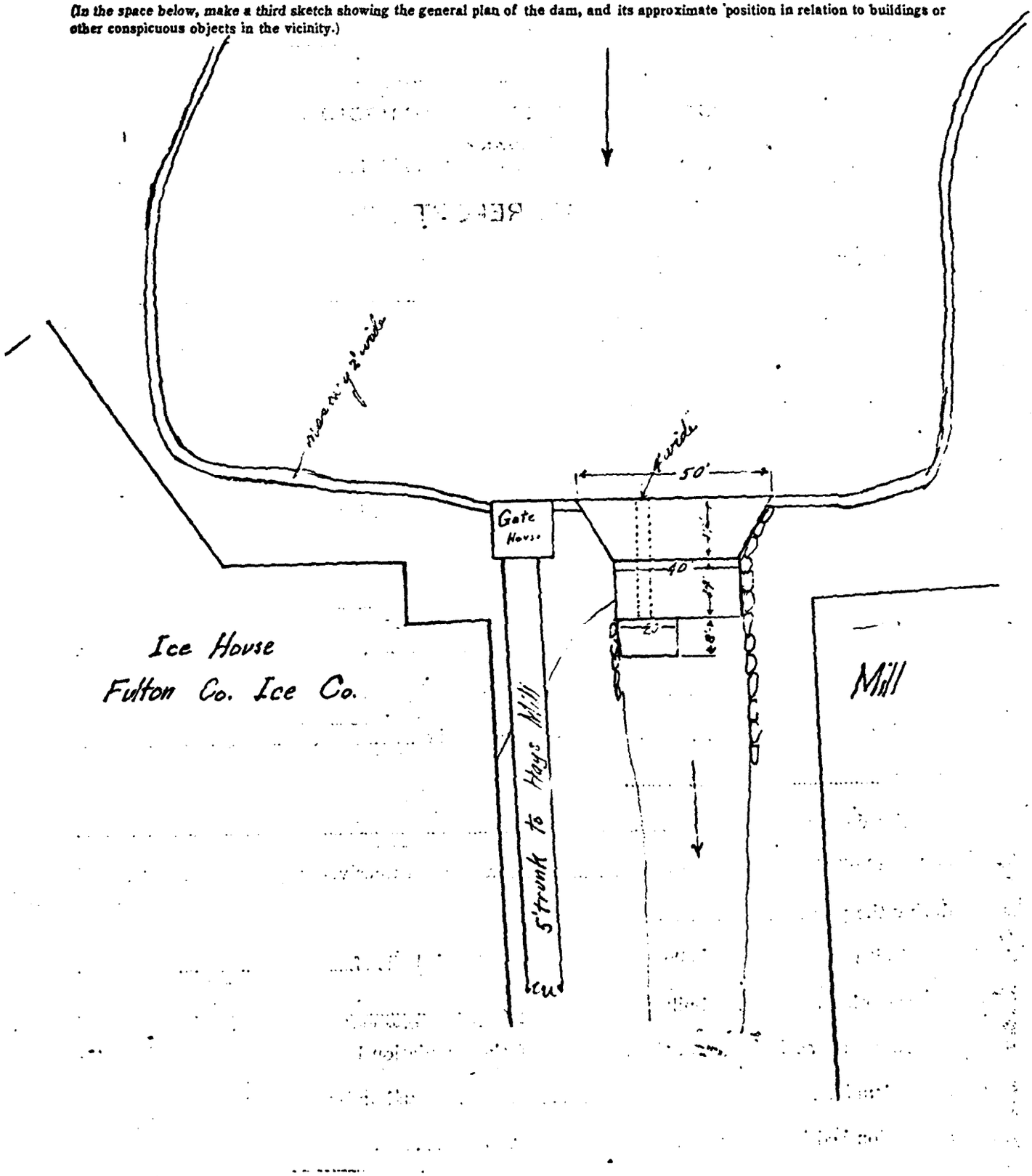
The dam is now owned by The Daniel Hays Co. 11 & 13 St. Lawrence St. Malone N.Y.
(Give name and address in full)
and was built in or about the year 1914, and was extensively repaired or reconstructed during the year ——.

As it now stands, the spillway portion of this dam is built of masonry, concrete and timber
(State whether of masonry, concrete or timber)
and the other portions are built of masonry, earth and rock fill
(State whether of masonry, concrete, earth or timber with or without rock fill)

As nearly as I can learn, the character of the foundation bed under the spillway portion of the dam is rock and under the remaining portions such foundation bed is rock

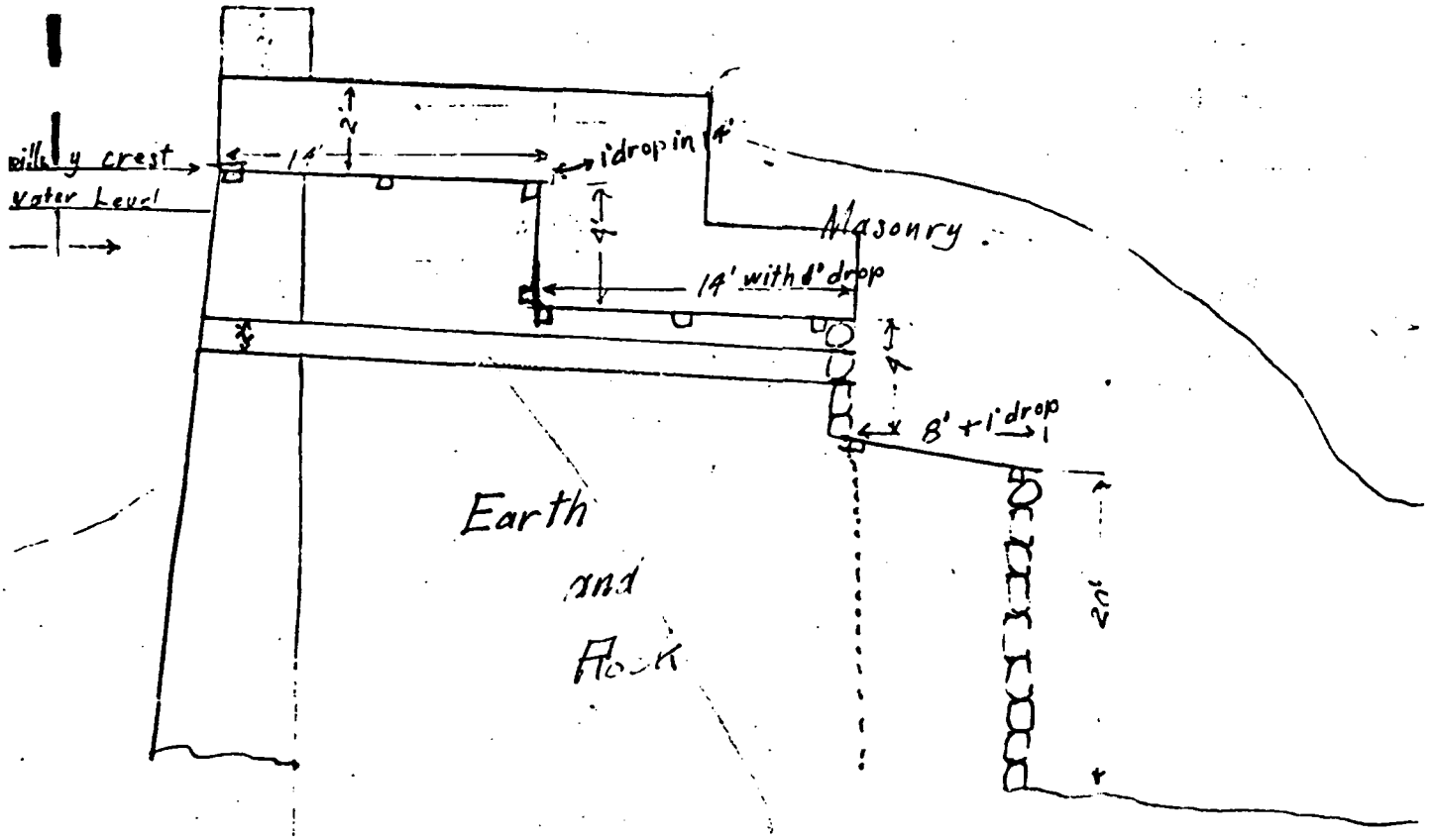
PEC

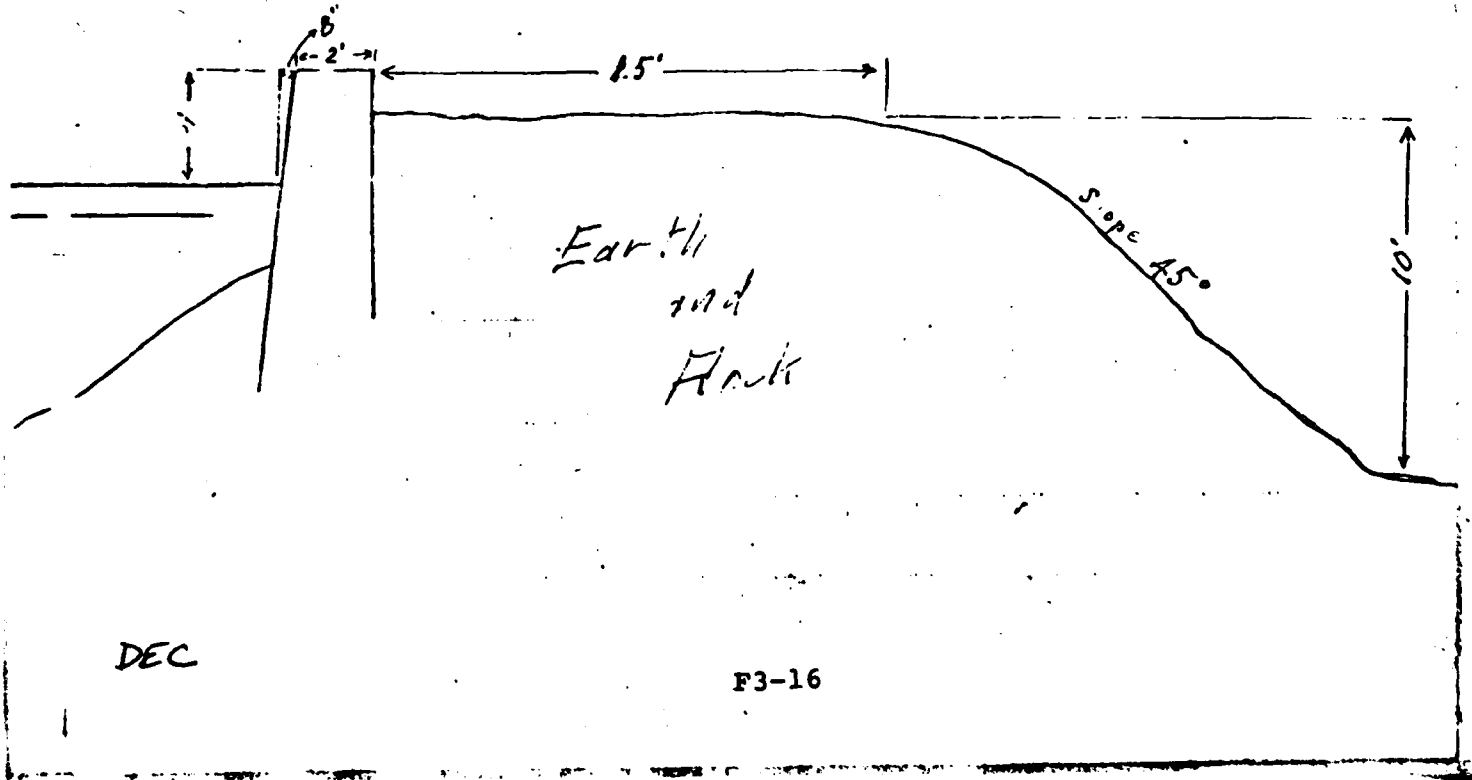
(In the space below, make a third sketch showing the general plan of the dam, and its approximate position in relation to buildings or other conspicuous objects in the vicinity.)



DEC

(In the space below, make one sketch showing the form and dimensions of a cross section through the spillway or waste-weir of this dam and outline the abutment, and a second sketch showing the same information for a cross section through the other portion of the dam. Show particularly the greatest height of the dam above the stream bed, its thickness at the top, and thickness at the bottom, as nearly as you can learn.)





DEC

The total length of this dam is 60' feet. The spillway or waste-weir portion, is about 50 feet long, and the crest of the spillway is about 2 feet below the abutment.

The number, size and location of discharge pipes, waste pipes or gates which may be used for drawing off the water from behind the dam, are as follows: one 3" tube to right of spillway and one 2" pipe 2' high and 4' wide.

At the time of this inspection the water level above the dam was 1 ft. 6 in. below above the crest of the spillway.

(State briefly, in the space below, whether, in your judgment, this dam is in good condition, or bad condition, describing particularly any leaks or cracks or erosions which you may have observed.)

Some erosion has taken place to the right of the spillway, otherwise the dam is in good condition.

Reported by C. L. Whitman
(Signature)

Box 257
(Address—Street and number, P. O. Box or R. F. D. route)

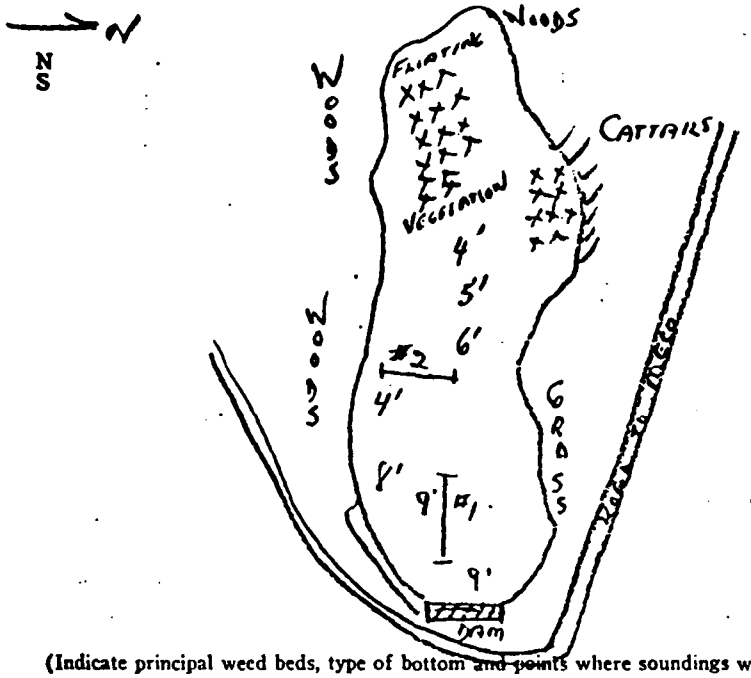
Oakdale, Calif.
(Name of place)

DEC

West Millpond Dam-Spillway from downstream - 5/19/19

WEST MILL POND (1955)

(Outline sketch of lake or pond)



(Indicate principal weed beds, type of bottom and points where soundings were taken on sketch; also indicate, by numbers, points where collections were taken)

Area 15A. est. Elevation 860'

If posted: Owner's name and address

Bottom: clay, gravel, marl, muck (90), rock (10), sand (underline; give % of each type)

Vegetation: scant, fair, abundant, floating (10), submerged (90) (underline; give % of each type)

Source: springs in bottom, spring streams, surface water (underline)

Shore line: wooded (33), swampy (33), cultivated, URBAN (33)

Color of water: white, light brown, brown

Height of dam if present 25'

Accessibility: road, trail, portage

NYSDEC BUREAU OF FISH & WILDLIFE

Game fish : non-game fish ratio

Trout spawning success None

Fertility: 2.5 Productive

Soil type 2

Invertebrate food 2.5

Accessible forage area (% bottom)

Management: Trout or non-trout

bait, spearing (check if applicable)

Salvage netting

Other management

Stocking (Ca.S., Y.P., B

when available

Stock as:

F3-19

DNR DAM INSPECTION REPORT

RB	CTY	YR AP.	DAM NO.	INS. DATE	USE	TYPE
03	18	13	000392	180970	003	4

AS BUILT INSPECTION

1	Location of Sp'way and outlet	1	Elevations
1	Size of Sp'way and Outlet	1	Geometry of Non-overflow section

1	GENERAL CONDITION OF NON-OVERFLOW SECTION				
2	Settlement	2	Cracks	1	Deflections
2	Joints	2	Surface of Concrete	1	Leakage
1	Undermining	2	Settlement of Embankment	1	Crest of Dam
1	Downstream Slope	1	Upstream Slope	1	Toe of Slope

1	GENERAL COND. OF SP'WAY AND OUTLET WORKS				
1	Auxiliary Spillway	2	Service or Concrete Sp'way	1	Stilling Basin
2	Joints	2	Surface of Concrete	1	Spillway Toe
2	Mechanical Equipment	1	Plunge Pool	2	Drain

2	Maintenance	C	Hazard Class
3	Evaluation	3Y	Inspector

COMMENTS:

Some cracking of concrete wingwalls but no leakage noticed.

Re-inspected 7/12/79 KOH.
"Some" but scaled letter on Tires

DEC

DEC DAM INSPECTION REPORT CODING

1. River Basin - Nos. 1-23 on Compilation Sheets
2. County - Nos. 1-62 Alphabetically
3. Year Approved -
4. Inspection Date - Month, Day, Year
5. Apparent use -
   1. Fish & Wildlife Management
   2. Recreation
   3. Water Supply
   4. Power
   5. Farm
   6. No Apparent Use
6. Type -
   1. Earth with Aux. Service Spillway
   2. Earth with Single Conc. Spillway
   3. Earth with Single non-conc. Spillway
   4. Concrete
   5. Other
7. As-Built Inspection - Built substantially according to approved plans and specifications

Location of Spillway and Outlet Works

1. Appears to meet originally approved plans and specifications.
2. Not built according to plans and specifications and location appears to be detrimental to structure.
3. Not built according to plans and specifications but location does not appear to be detrimental to structure.

Elevations

1. Generally in accordance to approved plans and specifications as determined from visual inspection and use of hand level.
2. Not built according to plans and specifications and elevation changes appear to be detrimental to structure.
3. Not built according to plans and specifications but elevation changes do not appear to be detrimental to structure.

Size of Spillway and Outlet Works

1. Appears to meet originally approved plans and specifications as determined by field measurements using tape measure.
2. Not built according to plans and specifications and changes appear detrimental to structure.
3. Not built according to plans and specifications but changes do not appear detrimental to structure.

Geometry of Non-overflow Structures

1. Generally in accordance to originally approved plans and specifications as determined from visual inspection and use of hand level and tape measure.
2. Not built according to plans and specifications and changes appear detrimental to structure.
3. Not built according to plans and specifications but changes do not appear detrimental to structure.

General Conditions of Non-Overflow Section

1. Adequate - No apparent repairs needed or minor repairs which can be covered by periodic maintenance.
2. Inadequate - Items in need of major repair.

(Items) For boxes listed on condition under non-overflow section.
1. Satisfactory.
2. Can be covered by periodic maintenance.
3. Unsatisfactory - Above and beyond normal maintenance.

DEC DAM INSPECTION REPORT CODING (cont.)

General Condition of Spillway and Outlet Works

1. Adequate - No apparent repairs needed or minor repairs which can be covered by periodic maintenance.
2. Inadequate - Items in need of major repair.

(Items) For boxes listed conditions listed under spillway and outlet works.

1. Satisfactory.
2. Can be covered by periodic maintenance.
3. Unsatisfactory - Above and beyond normal maintenance.
4. Dam does not contain this feature.

Maintenance

1. Evidence of periodic maintenance being performed.
2. No evidence of periodic maintenance.
3. No longer a dam or dam no longer in use.

.S.)

Hazard Classification Downstream

1. (A) Damage to agriculture and county roads.
2. (B) Damage to private and/or public property.
3. (C) Loss of life and/or property.

Evaluation - Based on Judgment and Classification in Box Nos.

Evaluation for Unsafe Dam

1. Unsafe - Repairable.
2. Unsafe - Not Repairable.
3. Insufficient evidence to declare unsafe.

River Basins	Counties	
(1) LOWER HUDSON	1 Albany	36 Orange
(2) UPPER HUDSON	2 Allegany	37 Orleans
(3) MOHAWK	3 Bronx	38 Oswego
(4) LAKE CHAMPLAIN	4 Broome	39 Otsego
(5) DELAWARE	5 Cattaraugus	40 Putnam
(6) SUSQUEHANNA	6 Cayuga	41 Queens
(7) CHEMUNG	7 Chautauqua	42 Rensselaer
(8) OSWEGO	8 Chemung	43 Richmond
(9) GENESEE	9 Chenango	44 Rockland
(10) ALLEGHENY	10 Clinton	45 St. Lawrence
(11) LAKE ERIE	11 Columbia	46 Saratoga
(12) WESTERN LAKE ONTARIO	12 Cortland	47 Schenectady
(13) CENTRAL LAKE ONTARIO	13 Delaware	48 Schoharie
(14) EASTERN LAKE ONTARIO	14 Dutchess	49 Schuyler
(15) SALMON RIVER	15 Erie	50 Seneca
(16) BLACK RIVER	16 Essex	51 Steuben
(17) WEST ST. LAWRENCE	17 Franklin	52 Suffolk
(18) EAST ST. LAWRENCE	18 Fulton	53 Sullivan
(19) RACQUETTE RIVER	19 Genesee	54 Tioga
(20) ST. REGIS RIVER	20 Greene	55 Tompkins
(21) HOUSATONIC	21 Hamilton	56 Ulster
(22) LONG ISLAND	22 Herkimer	57 Warren
(23) OSWEGATCHIE	23 Jefferson	58 Washington
(24) GLASSE	24 Kings	59 Wayne
	25 Lewis	60 Westchester
	26 Livingston	61 Wyoming
	27 Madison	62 Yates
	28 Monroe	
	29 Montgomery	
	30 Nassau	
	31 New York	
	32 Niagara	
	33 Oneida	
	34 Onondaga	
	35 Ontario	

CHARLES R. ACKERBAUER
PROFESSIONAL ENGINEER
LICENSED LAND SURVEYOR
808 PRINDLE AVENUE
JOHNSTOWN, N. Y. 12095
SURVEY RECORDS OF J. H. MOWREY
PHONE - 762-4881

July 17, 1979

Mr. Chris Chiappa
Lee Dyeing Company
Gloversville, New York 12078

RE: West Mill Pond, Dam of Rovel Aqua.,Inc.
West Fulton St.,Gloversville, New York

Dear Sir,

Please be advised that I have inspected the above captioned dam on this date and have found it to be sound and in no danger of collapse.

As part of a routine maintainance program the concrete and masonry should be inspected yearly by your staff and any repairs necessary should be promptly attended to.

If you have any questions feel free to call.

Yours truly,

Charles R. Ackerbauer, PE LS

OWNER

F3-23

Room 609

Robert F. Flacke,

July 18, 1979

Rovel Aqua, Inc.
c/o Jacob Schulman and Company
97 North Main Street
Gloversville, New York 12078

Re: Dam #392 Mohawk
at Intersection of
Route 29A and W. Fulton St.

Dear Mr. Schulman:

In accordance with the Department of Environmental Conservation's Dam Safety Program, an inspection of the referred to structure was conducted on July 12, 1979.

The following defects were observed:

Trees and brush growing on the dam;

Stone displacement;

Concrete deterioration.

This office recommends that the vegetation be removed, stones replaced, and that the structure be maintained on a routine basis.

If you should have any questions, please call me at Area Code 518-457-6310.

Sincerely,

Kenneth D. Harmer
Dam Safety Program Coordinator

cc: Mr. F. M. Dailey
Mr. W. Muerman

KDH:kf

DEC

:v. 3/11) NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DAM INSPECTION REPORT
(By Visual Inspection)

West Mill Dam

Dam Number	River Basin	Town	County	Hazard Class	Date & Inspector
172D-392	Mohawk	Glenville	Fulton	C	5/6/80

Stream = MICO CREEK Owner = ROUEL AGWAY INC.

Type of Construction

- [ ] Earth w/Concrete Spillway
- [ ] Earth w/Drop Inlet Pipe
- [x] Earth w/Stone or Riprap Spillway
- [ ] Concrete
- [ ] Stone
- [ ] Timber
- [ ] Other _____

Use

- [ ] Water Supply
- [ ] Power
- [ ] Recreation - [ ] High Density
- [ ] Fish and Wildlife
- [ ] Farm Pond
- [x] No Apparent Use-Abandoned
- [ ] Flood Control
- [ ] Other _____

Estimated Impoundment Size 26 Acres ### Estimated Height of Dam above Streambed 25 Ft.

Condition of Spillway

- [x] Service satisfactory
- [ ] In need of repair or maintenance
- [ ] Auxiliary satisfactory
- [ ] In need of repair or maintenance

Explain: concrete capped

Condition of Non-Overflow Section

- [ ] Satisfactory
- [x] In need of repair or maintenance

Explain: trees some seepage through stone sections

Condition of Mechanical Equipment

- [ ] Satisfactory
- [ ] In need of repair or maintenance

Explain: _____

Siltation [x] High [ ] Low

Explain: _____

Remarks: _____

Evaluation (From Visual Inspection)

- [ ] Repairs req'd. beyond normal maint.
- [x] No defects observed beyond normal maint.

PEC

West Mill Pond

Capacity 40 Million gals in 1953

Weed Killer Supplier - Env-Chem Corp

treatment 1974 100 gals @ $8.95 of Aquatic-Weed Killer

Labor 4 men 160 hours with Boat & Pump. rate $8.00 per hour (?) 9/12 80.00

gate work was opened in 1977
2 men @ 15.00 2 hours 60.00
Was opened in the early 70s how much time Not sure but it took days. boat etc
It must be opened again this year

Brush Removal 1979 1 man 2 days
@ 10.00 = 160.00
There is probably twice as much to cut this year.
In approx 1971 we spent 2 or 3 days work a Crane and about 4 men + dump truck hauling debris from below dam
? Crane 1000.00 labor & truck 1200.00 ?

Inspection Inspected by Charles Ackerbower P.E. Summer of 79 - report coming 3/28/80
Inspected by Dick Mc twice a year since early 70s
Should be inspected as to condition of Road, Structure with a boat for silt settled etc - weed growth and water condition, and our own feel - we are not getting the water we were a few years ago. We flow water thru the pipe and into Creek by mill to keep the pipes clean

OWNER

Water usage - Turbine we limit used and doubt if we will

Pollution unit - We let the water run continuous it flows at 10 PSI 15.37 gals per hour
7 days 255 5-52 per week
could use -
5 days (12 hours a day) 92340 per week

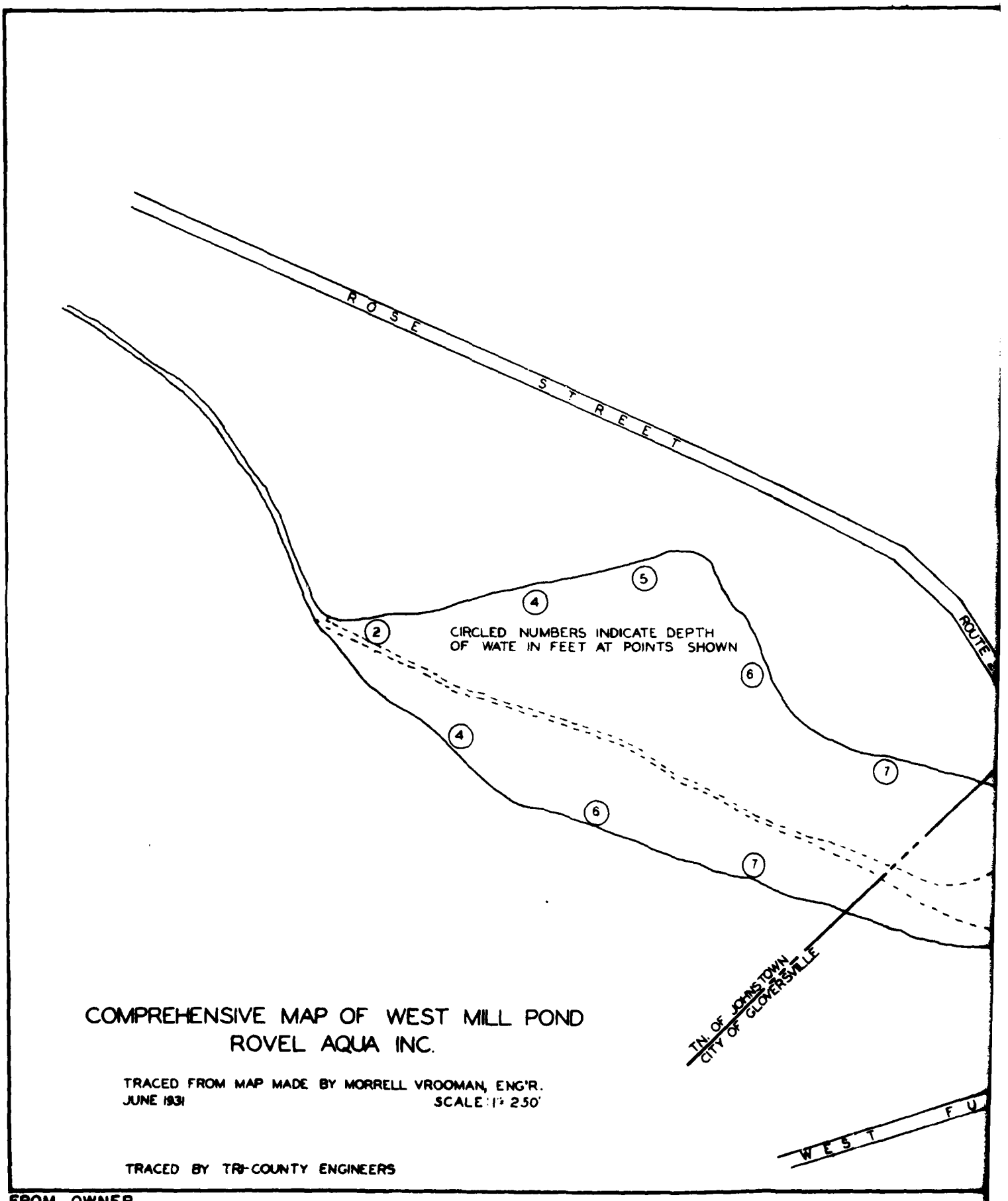
Note
at 10 PSI we might use it in air conditioner for coffee
July 79 we used 72 300 " = = 5-40 8-4 gal
(this is without sewer)
sewer to-day cost

OWNER

APPENDIX G

DRAWINGS

TABLE OF CONTENTS

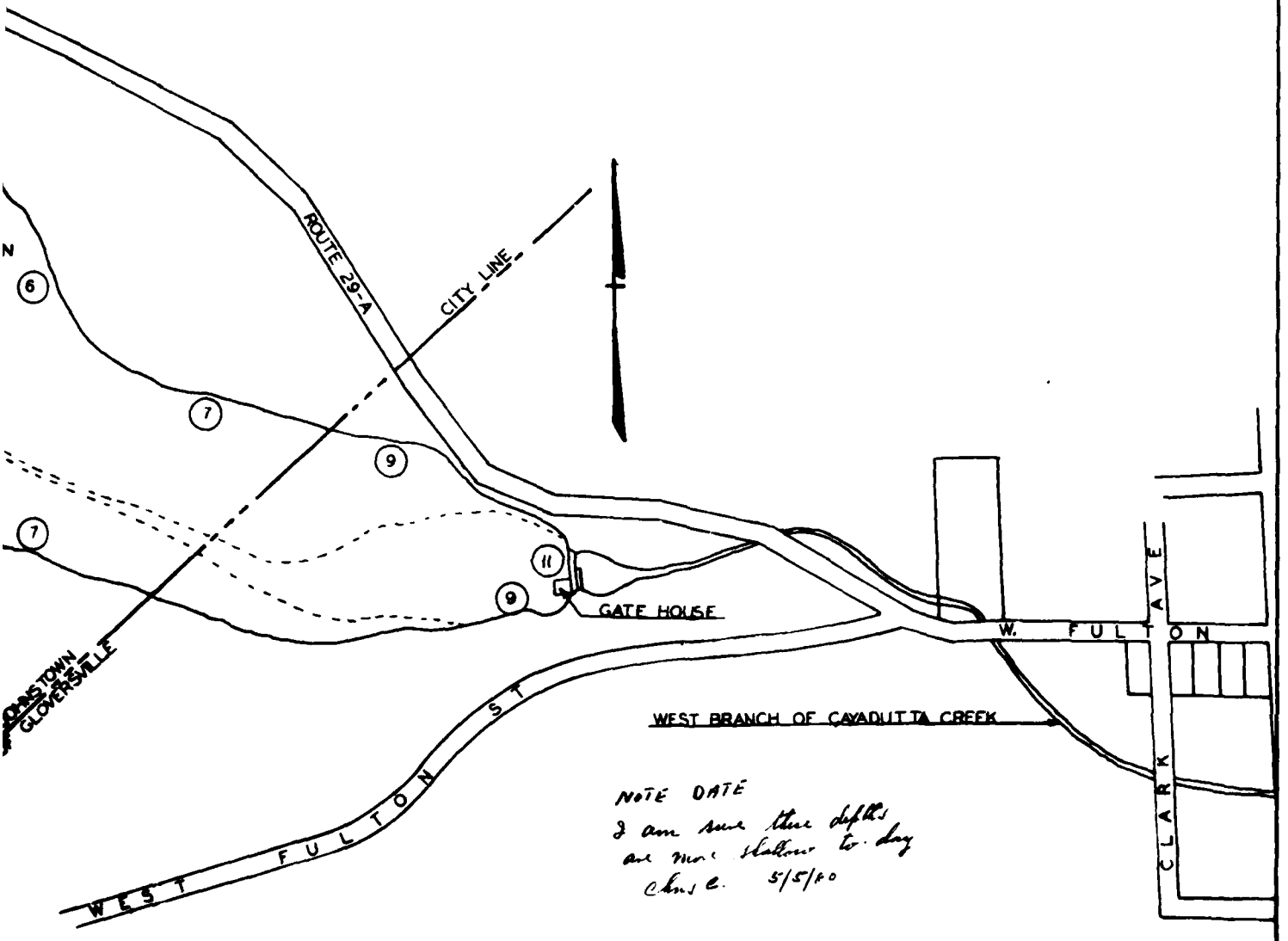


COMPREHENSIVE MAP OF WEST MILL POND
ROVEL AQUA INC.

TRACED FROM MAP MADE BY MORRELL VROOMAN, ENG'R.
JUNE 1931 SCALE: 1" = 250'

TRACED BY TRI-COUNTY ENGINEERS

FROM OWNER
REDUCED TO 77% OF ORIGINAL



G-1 CTM D 'S NO. 81-186

1 2


ATE
LME